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# OBJECTIVE ENTOMOLOGY: BASICS AT TIPS

Sheenam Bhateja

Sachin



Bhumi Publishing

# **OBJECTIVE ENTOMOLOGY: BASICS AT TIPS**

**(ISBN: 978-93-88901-45-1)**

**(For all the competitive Examinations like  
ASRB NET, ICAR-JRF/SRF, BHU, JNU and other state exams AAO, AO, ARO, AARO)**

## **Authors**

**Sheenam Bhateja**

**Sachin**



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## **PREFACE**

*Objective Entomology book is an essential tool for students and professionals alike who seek to gain a deep understanding of a subject matter. The purpose of an objective book is to provide a comprehensive and structured approach to learning, which helps readers to organize their knowledge and test their understanding through objective questions and answers.*

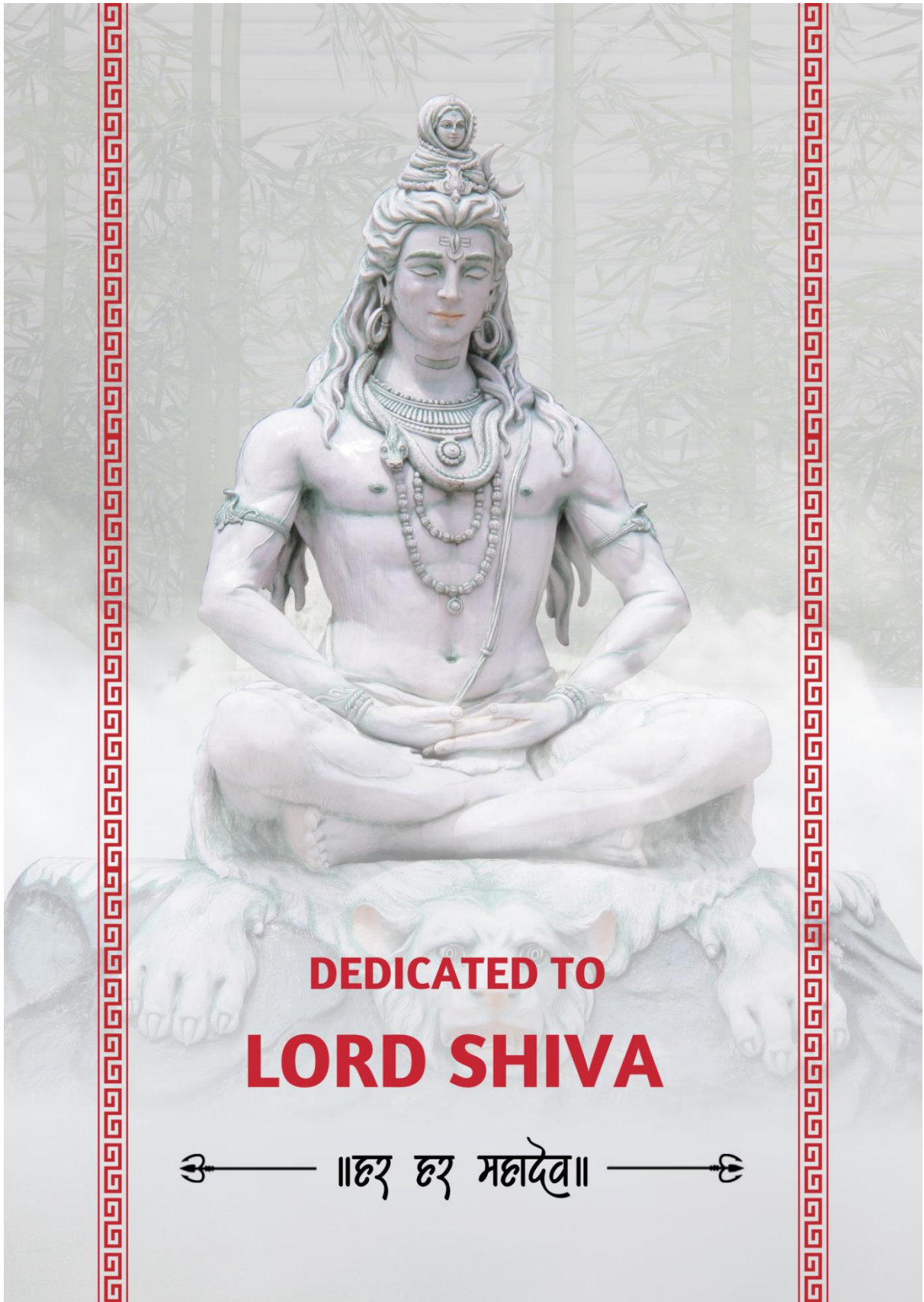
*This book is designed to be a valuable resource for anyone who wants to learn about the subject in an objective manner. It is structured in a way that covers all important topics related to the subject matter and is presented in a question-answer format. The book aims to provide a strong foundation and a thorough understanding of the subject matter.*

*The objective questions are designed to get knowledge and understanding of the topics for various examination. The book covers all essential aspects of the subject, including basic concepts, advanced theories, and real-life applications. In addition, the book includes tips and tricks that will help readers to study and learn more effectively. These tips are based on the author's own experience and are designed to help readers develop the skills and habits they need to succeed in their studies.*

*Overall, this book aims to provide readers with a comprehensive understanding of the subject matter, in an objective manner. It is hoped that this book will be a valuable resource for students and professionals alike who seek to enhance their knowledge and understanding of the subject.*

**Sheenam Bhateja  
Sachin**





**DEDICATED TO  
LORD SHIVA**

ॐ ———— ॥ ह्य ह्य महादेव ॥ ———— ॐ

**SYLLABUS FOR THE ALL INDIA COMPETITIVE EXAMINATION FOR ADMISSION TO  
DOCTORAL DEGREE PROGRAMMES AND THE AWARD OF JRF/SRF(PGS)**

**[NOTE: Section B comprising of 180 MCQs will contain questions from each of the  
Sub-subject listed under a Major Subject Group]**

**AGRICULTURAL ENTOMOLOGY/ENTOMOLOGY**

**Unit 1: Systematics**

History and development of Entomology, Evolution of insects, position of insects in the animal world, characteristics of phylum Arthropoda, structural features of important arthropod groups such as Trilobita, Chelicerata and Mandibulata, structural features of important classes of phylum Arthropoda viz. Arachnida, Crustacea, Chilopoda, Diplopoda and Hexapoda. Classification of insects up to order level, habits, habitats and distinguishing features of different Order and important Families.

**Unit 2: Morphology**

Body wall, its structure, outgrowths, endoskeleton, Body regions, segmentation, sclerites and sutures, Insect Colors. Head and head appendages, types of mouth parts, antennae, their structure and types. Thorax structure, thoracic appendages and their modification. Wings, their modification and venation, Abdomen; structure, abdominal appendages both in Pterygota and Apteriygota. External genitalia, general structure and modification in important insect orders.

**Unit 3: Embryology, Internal Anatomy and Physiology**

Embryonic and post embryonic development, types of metamorphosis, physiology of ecdysis. General features and types of larvae and pupae. Structure, function and physiology of Digestive, Circulatory, Respiratory, Reproductive, Nervous and Excretory systems, Sense Organs; structure and types. Insect food and nutrition; minerals, carbohydrates, proteins and amino acids, lipids, vitamins and their role in growth and development, artificial diets.

**Unit 4: Ecology**

Concept of ecology, Environment and its components-biotic and abiotic factors and their effects on growth, development, population dynamics, distribution and dispersal. Principle of biogeography and insects biodiversity. Assessment of diversity indices. Biotic potential and environmental resistance. Ecosystems, agroecosystems analysis, their characteristics and functioning. Intra and inter specific relationship; competition,

predator-prey and host-parasite interactions, ecological niche. Life table studies, population models. Food chain and food web. Arthropod population monitoring, pest forecasting. Diapause and causes of pest out-breaks.

### **Unit 5: Biological Control**

Importance and scope of biological control, history of biological control: Biocontrol agents-parasites, predators and insect pathogens. Important entomophagous insect Orders and Families. Ecological, biological, taxonomic, legal and economic aspects of biological control, phenomena of multiple parasitism, hyperparasitism, superparasitism and their applied importance. Principles and procedures of using exotic biocontrol agents. Utilization of natural biocontrol agents: conservation, habitat management and augmentation. Mass multiplication techniques and economics. Effective evaluation techniques, Biocontrol organizations in world and India. Successful cases of biological control of pests. Use of biotechnological tools in enhancing the potentials of Bio-Control Agents.

### **Unit 6: Chemical Control and Toxicology**

History, scope and principles of chemical control. Insecticides and their classification. Formulations of insecticides. Susceptibility of insects to the entry of insecticides. Physical, chemical and toxicological properties of different groups of insecticides: chlorinated hydrocarbons, organophosphates, carbamates, synthetic pyrethroids, chlordimeform, chitin synthesis inhibitors, avermectins, nitroguanidines, phenylpyrrozzoles, botanicals (natural pyrethroids, rotenone, neem products, nicotine, pongamia spp. etc). Chloronicotinyl, pyroazole, phenylpyrrozzoles, oxadiazines, benzamidazole, neristoxin, rodenticides, insect hormones, Insecticide induced resurgence. Combination insecticides. Problems of pesticide hazards and environmental pollution. Safe use of pesticides, precautions and first aid treatments. Insecticides Act 1968, registration and quality control of insecticides. Evaluation of toxicity, methods of toxicity testing, determination of LD 50, LT 50, RL 50 etc. Pesticides residues in the environment and their dynamics of movements, methods of residue. Pharmacology of insect poisons. Mode of action of different groups of insecticides; neuroactive (axonal and synaptic) poisons, respiratory poisons, chitin synthesis inhibitors. Metabolism of insecticides; activative and degradative metabolism, detoxification enzymes and their role in metabolism. Selectivity of insecticidal actions; insecticide resistance; mechanism, genetics and management of insecticide resistance.

## **Unit 7: Host Plant Resistance**

Chemical ecology: mechano- and chemoreceptors. Host plant selection by phytophagous insects. Secondary plant substances and their defenses against phytophagous insect. Basis of resistance (Antixenosis, Antibiosis, Tolerance). Biotypes development and its remedial measures. Tritrophic interactions, induced resistance. Breeding for insect resistant plant varieties. Resistance development and evaluation techniques. Genetics of Resistance: vertical resistance, horizontal resistance, oligogenic resistance, polygenic resistance. Biotechnological approaches and development of transgenic insect resistant plants, its advantages and limitations. Case histories. Insect resistance to transgenic plants and its management.

## **Unit 8: Innovative Approaches in Pest Control**

Behavioral control: pheromones-types and uses, advantages and limitations. Hormonal control: types and function of insect hormones, insect hormone mimics, advantages and limitations. chemosterilants, antifeedants, attractants, repellents; their types, method of applications, advantages and limitations. Genetic control: concepts and methods, case histories, advantages and limitations. Potentialities of IPM.

## **Unit 9: Integrated Pest Management**

History, concept and principles of IPM. Components of IPM: Host plant resistance, agronomic manipulations, mechanical and physical methods, chemical methods, biocontrol agents utilization, genetic and behavioral control strategy etc. IPM strategies for field and horticultural crops. IPM case histories. Concept of damage levels- Economic threshold levels (ETL), Economic injury levels (EIL) and their determination. System approach, Agro ecosystem and cropping system vs. IPM. Constraints and Strategies of IPM implementation. Plant quarantine laws and regulations.

## **Unit 10: Pesticide Application Equipments**

Types of appliances: sprayers, dusters, fog generators, smoke generators, soil injecting guns, seed treating drums, flame throwers, etc. Power operated sprayers and dusters. Types of nozzles and their uses. Maintenance of appliances. Aerial application of pesticides, principles of aerial application, factors affecting the effectiveness of aerial application. Equipments for aerial applications. Advantages and disadvantages of aerial application.



### **Unit 11: Pests of Field Crops and their Management**

Distribution, host range, biology and bionomics, nature of damage and management of arthropod pests of cereals, Oilseed, pulses and fibre crops, sugarcane and tobacco. Polyphagous pests: locusts, termites, hairy caterpillars, cut worms and white grubs.

### **Unit 12: Pests of Horticultural Crops and their Management**

Distribution, host range, biology and bionomics, nature of damage and management of arthropod pests of vegetables, fruits and plantation crops, spices, condiments and ornamentals, Vertebrate Pests.

### **Unit 13: Pests of Stored Products and their Management**

Fundamentals of storage of grains and grain products. Storage losses, sources of infestation/infection, factors influencing losses, insect and non-insect pests, their nature of damage and control. Microflora in storage environment and their control. Storage structures, bulk storage and bag storage, their relative efficacy and demerits. Grain drying methods and aeration. Non-insect pests (rodents, birds, mites) of stored products and their control. Regulated and quarantine pests. Integrated management of storage pests.

### **Unit 14: Arthropod Vectors of Plant Diseases**

Common arthropod vectors viz., aphids, leaf hoppers, plant hoppers, whiteflies, thrips, psyllids, beetles, weevils, flies, bees and mites and their relationship with the plant pathogenic fungi, bacteria, viruses, mycoplasma. Mechanism of pathogen transmission : Active mechanical transmission, biological transmission. Toxicogenic insects, mites and phytotoxemia. Some important arthropod vector transmitted diseases and their epidemiology in India. Management of vector and its effect on control of diseases.

### **Unit 15: Honey Bees and Bee-keeping**

Honey bees and their economic importance. Bee species, their behaviour, habit and habitats. Bee Keeping: bee pasturage, hives and equipments, seasonal management. Bee enemies including diseases and their control.

### **Unit 16: Silkworms and Sericulture**

Silkworm species, their systematic position and salient features. Rearing techniques of mulberry - muga, eri and tassar silkworms. Nutritional requirements of silkworms. Sericulture: rearing house and appliances, silkworm breeds, principles of voltinism and niultinism, seed production and its economics. Different molecular approaches in developing silkworm breeds. Silkworm genomics- a model genetic system- transgenic silkworm- production of foreign proteins. Mulberry pests, diseases and their

management. By products of sericulture and its value addition, uses in pharmaceutical industry. Enemies and diseases of silkworms and their management. Sericulture organization in India.

### **Unit 17: Lac Insect**

Lac insect, its biology, habit and habitats. Host Trees: pruning, inoculation, lac cropping techniques, and harvesting. Enemies of lac insect and their control.

### **Unit 18: Other Useful Insects**

Pollinators, biocontrol agents of weeds, soil fertility improving agents, scavengers. Use of insects and insect products in medicines. Usefulness of insects in scientific investigations, insects as food.

### **Unit 19: Statistics and Computer Application**

Frequency distribution, mean, mode and median. Standard, normal, binomial and Poisson's distribution, Sampling methods and standard errors. Correlation and regression: Partial and multiple, tests of significance; t, F, chi-square, Duncan's multiple range tests. Design of experiments: Principles of Randomized block design, Completely randomized block design, Latin square design, Split-plot designs. Probit analysis. Use of software packages like SPSS, SAS, etc. for the above tests and designs of experiments for analysis.

## INSECTA PART A

01. Smallest honey bee species is
  - a) *Apis dorsata*
  - b) *Apis Melifera*
  - c) *Apis florea*
  - d) *Apis labriosa*
02. Cantharidin is extracted from \_\_\_ and used in \_\_\_
  - a) Blister beetle, anthritis
  - b) Honey bee, rheumatism
  - c) Lac insect, polishes
  - d) Blister beetle, hair tonic
03. Insect used in toxicological studies \_\_\_\_
  - a) Cockroach
  - b) *Drosophila*
  - c) Mosquitoes
  - d) Butterflies
04. Example of scavenger insect \_\_\_\_
  - a) *Collembola*
  - b) Cut worms
  - c) Mexican beetle
  - d) Carrion beetle
05. Type of comb constructed by Italian bee \_\_
  - a) Multiple parallel comb in open
  - b) Single comb in cavities
  - c) Single comb in tree hollows
  - d) Multiple parallel combs in cavities
06. Smallest bee hive is of \_\_\_\_
  - a) Rock bee
  - b) Little bee
  - c) European bee
  - d) Indian bee
07. Family of Asian bee \_\_\_\_
  - a) Apidae
  - b) Megachelidae
  - c) Meliponidae
  - d) Melittidae
08. \_\_\_ are ferocious bees and difficult to rear
  - a) Indian bee
  - b) Rock bee
  - c) Italian Bee
  - d) Little bee
09. Honey yield of Dammer bees \_\_\_\_
  - a) 100 kg per hive per year
  - b) 35 kg per hive per year
  - c) 100 g per hive per year
  - d) 5 kg per hive per year
10. Queen substance is secreted by \_\_\_\_
  - a) Hypo - pharyngeal glands of queen
  - b) Mandibular glands of worker bee
  - c) Hypo-pharyngeal gland of worker
  - d) Mandibular glands of queen bee
11. Queen bee lay \_\_\_\_
  - a) Fertilized eggs
  - b) Unfertilized eggs
  - c) Both
  - d) They are viviparous
12. Nest of Dammer bee is made up of \_\_\_\_
  - a) Wax and mud
  - b) Propolis
  - c) Wax
  - d) wax and propolis
13. Queen bee lives for \_\_\_ years
  - a) 10 years
  - b) 3-5 years
  - c) more than 20 years
  - d) Few hours
14. Which one are predatory insects \_\_\_\_
  - a) Cochneal insect, *Coccinellids*
  - b) Carrion beetles, Praying mantids
  - c) *Coccinellids*, praying mantids
  - d) Carrion beetles, cochineal insects

15. World Bee Day is celebrated on \_\_\_\_\_
- 20 March
  - 20 May
  - 16 August
  - 20 August
16. In India Bee keeping was introduced in \_\_\_\_\_
- South India in 1882
  - Bengal in 1882
  - Bengal in 1911
  - South India in 1911
17. Discovery of Movable Frame Hive was done \_\_\_\_\_
- Newton in 1882
  - L. L. Langshoth in 1851
  - Newton in 1851
  - L. L. Langshoth in 1882
18. Vector of Typhoid disease \_\_\_\_\_
- Horse Fly
  - House Fly
  - Mosquitoes
  - Nematodes
19. Insect used in Nutritional studies \_\_\_\_\_
- Fruit fly
  - Cockroaches
  - Mosquito
  - Mantids
20. Which insects are used as food \_\_\_\_\_
- Termites
  - Moth pupa
  - Both A & B
  - Jewel beetles
21. Family of Dammer Bee \_\_\_\_\_
- Meliporidae
  - Megachilidae
  - Apidae
  - Mellitidae
22. Worlds largest honey bee species \_\_\_\_\_
- Apis dorsata*
  - Apis mellifera*
  - Apis labriosa*
  - Apis cerena*
23. Choose the correct pair \_\_\_\_\_
- Rock bee - *Apis cerena*
  - Indian bee - Cerumen
  - Italian bee - 35 kg of honey/hive/year
  - India rank in honey- 1st
24. Example of social insects \_\_\_\_\_
- Honey bee
  - Termites
  - Both A & B
  - Beetles
25. Worker is \_\_\_\_\_
- Sterile male
  - Fertile female
  - Fertile male
  - Sterile female
26. \_\_\_\_\_ is natural method of colony multiplication
- Absconding
  - Parthenogenesis
  - Swarming
  - All
27. Choose the correct statement \_\_\_\_\_
- Royal fidelity is access of bees to varied pollen source
  - The first swarm which comes with old queen is known as after swarm or cast
  - Swarming is potent instinct in bee for dispersal and perpetuation
  - Odour of every colony is same

28. Life span of worker bee is \_\_\_\_
- 1 year
  - 6 weeks
  - 6 months
  - 6 years
29. Bee bread is mixture of \_\_\_\_ and fed to \_\_\_\_ by worker bees \_\_\_\_
- wax and honey, young larva
  - pollen and honey, young larva
  - pollen and honey, older larva
  - wax and honey, older larva
30. Duty of drone is \_\_\_\_
- Fertilize the queen
  - Ripening honey in stomach
  - Maintaining hive temperature
  - Both A & C
31. Choose the correct about wag tail dance
- Used to indicate distance less than 50m
  - Unable to convey the direction
  - No. of wags per unit time is inversely proportional to distance of food
  - Bees makes two complete circles, one clockwise and other anti clockwise
32. Vasanov gland is located at \_\_\_\_
- Last abdominal segment of queen bees
  - Last abdominal segment of workers
  - Thoracic segment of worker
  - Head
33. Royal jelly is secreted by \_\_\_\_
- Mandibular glands
  - Hypopharyngeal glands
  - Vasanov gland
  - Sting gland
34. When an old queen is unable to lay sufficient eggs, she will be replaced by \_\_\_\_
- Emergency queen
  - Laying workers
  - Supersedure queen
  - colony will end soon
35. No. of drones in 1 colony \_\_\_\_
- 1
  - few hundred
  - few thousand
  - few in no 20 to 50
36. Optimum bee space for Italian bees \_\_\_\_
- 7-9 mm
  - 10 mm
  - 10 cm
  - 7-9 cm
37. Hive suited for rearing *Apis mellifera* \_\_\_\_
- Newton hive
  - BIS hive
  - Langstroth hive
  - Marthandam hive
38. Choose the correct fact
- Drone cell is covered with convex cap with central hole
  - worker cell is heaxagonal with flat cap
  - Queen cell is largest and cylindrical
  - All
39. Surplus honey is stored in \_\_\_\_\_
- Brood chamber
  - Super chamber
  - Both a & b
  - Bottom board



40. \_\_\_\_ is useful to confine the queen to brood chamber \_\_\_\_
- Super clearer
  - Queen cage
  - Queen excluder
  - Queen cell protector
41. No. of wax glands in bee \_\_\_\_
- 4
  - 8
  - 6
  - 3
42. Honey extractor works on principle of \_\_\_\_ for honey extraction \_\_\_\_
- Gravitational force
  - Centrifugal force
  - Rotational force
  - Electrostatic force
43. Choose the correct statement \_\_\_\_
- Finding dead bees near hive is symptom of bee poisoning
  - WP and granules are more harmful formulations for bee than EC and dust
  - Adding sylgard adjuvant reduce bee mortality.
  - both a and c
44. Which of following are bee products \_\_\_\_
- bee wax
  - bee venom
  - royal jelly
  - all
45. Ripening of honey works on principle
- Evaporation
  - Transpiration
  - Capillarity
  - All
46. Nectar contains \_\_\_\_% sucrose
- 1.9
  - 20 to 40
  - 90
  - 5
47. Enzyme responsible for conversion of sucrose to glucose and fructose \_\_\_\_
- Invertase
  - Amylase
  - Maltose
  - Trehalase
48. Honey is not source of \_\_\_\_\_
- vitamin B
  - vitamin K
  - vitamin A
  - Magnesium
49. Fully ripened honey has maximum amount of \_\_\_\_
- Sucrose
  - Dextrose
  - Levulose
  - Dextrins
50. In India major portion of wax is from combs of \_\_\_\_\_
- Apis dorsata*
  - Apis cerena*
  - Apis florea*
  - Apis mellifera*
51. Specific gravity of pure honey is \_\_\_\_ and measured using \_\_\_\_\_
- 1.35 - 1.44 gm/cc, refractometer
  - 2.5 gm /cc, hydrometer
  - 1.35-1.44 gm/cc, hydrometer
  - 3 gm/cc, refractometer

52. 1 mellifera colony yields \_\_\_\_\_ gm venom
- 50
  - 100
  - 60
  - 75
53. Choose the wrong
- Royal jelly - Protein
  - Propolis - Resin and balsams
  - Bee Wax - Alcohol and Fatty Acid
  - Bee Wax melting point- 75 degree C
54. Newspaper method is for
- swarm management
  - uniting bee colonies
  - Honey extraction
  - bee wax collection
55. Sugar syrup given in dearth period is mixture of sugar and water in ratio \_\_\_\_\_
- 1:2
  - 2:1
  - 1:1
  - 1:3
56. Choose the correct
- Neem - source of nectar and pollen
  - Mango - source of both nectar and pollen
  - Maize- source of nectar
  - Sunflower - Source of pollen only
57. Bald Brood condition is due to-
- wax moth
  - wasps
  - mites
  - fungal disease
58. K winged condition in bees is due to \_\_\_\_\_
- tracheal mite
  - varroa mite
  - brood mite
  - spider mite
59. Family of wax moth \_\_\_\_\_
- Noctuidae
  - Galleridae
  - Pyralidae
  - Cerambycidae
60. Choose the correct
- Varroa mite- adult stage attack
  - Tracheal mite - ectoparasitic
  - Varroa mite- Endoparasitic
  - chalk brood disease- fungi
  - Thai sac brood - Bacteria
61. Pollination by bees is-
- Melitophily
  - Myophily
  - Cantharophily
  - Anemophily
62. No. of colonies \_\_\_/ha placed for Indian bee for pollination \_\_\_\_\_
- 3
  - 5
  - 6
  - 2
63. Tripping is related to pollination of \_\_
- Coriander
  - Alfalfa
  - apple
  - sunflower
64. Merops orientalis is
- Bee eater bird
  - Bee Parasitoid
  - Bee Mite
  - none
65. Pollination in cereals and grasses is by \_\_\_\_
- Entomophily
  - Anemophily
  - Zoophily
  - Hydrophily

66. National honey day \_\_\_\_\_
- May
  - August
  - November
  - April
67. Term Pest is derived from \_\_\_\_\_ word 'Peste' meaning plague.
- Latin
  - French
  - Greek
  - English
68. Occurrence of pest in a severe form in a region at particular time is \_\_\_\_\_
- Epidemic
  - Endemic
  - Pandemic
  - Minor pest
69. The most common method for propagation of mulberry plant is \_\_\_\_\_
- Seeds
  - Root grafts
  - Stem cuttings
  - Runners
70. Choose the correct
- Family of mulberry – Moraceae
  - Rank of India in sericulture - 2nd
  - Stem cuttings of mulberry for propagation - 22 to 23 cm long with 3 to 4 buds
  - All
71. Larva of mulberry silk worm undergoes \_\_\_\_\_ moults \_\_\_\_\_
- 3
  - 4
  - 5
  - 6
72. Choose the correct
- Flacherie- Bacteria
  - Isaria ferinosa- Yellow muscardine
  - Stifling- Kill the pupae in cocoon
  - Uzi Fly- order Hymenoptera
73. Silk worm eggs disinfected by \_\_\_\_\_
- 2% formalin
  - 5% formalin
  - HCL
  - H<sub>2</sub>SO<sub>4</sub>
74. Pollination by butterflies is known as \_\_\_\_\_
- Myophily
  - Psychophily
  - Phalaeophily
  - Cantharophily
75. Choose the wrong
- Rove beetles- Staphylinidae
  - Fig wasp- Agonidae
  - Syrphid fly- Larva is pollinator
  - Jewel beetles -aesthetic value
76. Choose the correct statement \_\_\_\_\_
- Pollen basket is absent in carpenter bees
  - Fig is pollinated by Blastophaga psenes
  - oil palm is pollinated by weevil
  - all
77. Which disease of silkworm is managed through mother moth examination \_\_\_\_\_
- Pebrine
  - Muscardine
  - Flacherie
  - Grasserrie

78. Choose the wrong statement about mulberry silk worm \_\_\_\_\_
- Nandi - Bivoltine hybrid
  - Adult moth is creamy white without any markings
  - The no. of generations is called crop
  - Temperature and humidity requirements - 23 to 25 degree C and >90% humidity
79. Scattered brood, sunken capping and ropy masses of larva are symptoms of \_\_\_\_\_
- European foul brood
  - Pebrine disease
  - American Foul brood
  - Sac brood virus
80. Transferring \_\_\_\_\_ instar larva to chandrikes is called mounting.
- 4
  - 5
  - 3
  - All
81. Choose the correct sequence (1<sup>st</sup> to last)
- Reels- bale-skein- books
  - Reels - skeins - bale- books
  - Reels- skeins- books- bales
  - Books-reel-skein-bales
82. Choose the correct
- Indian silk bale weighs 60 kg
  - International silk bale weighs- 60 g
  - Weight of 1 skein of silk - 70 g
  - Pebrine disease is caused by bacteria
83. Term Ecology Was PROPOSED by \_\_\_\_\_
- Odum
  - Price
  - Haeckel
  - Clements
84. Study of individual organism, its behaviour and influence of environment is known as \_\_\_\_\_
- Autecology
  - Synecology
  - Biome ecology
  - Ecosystem
85. Moisture and water commonly influence the distribution in insects like \_\_\_\_\_
- Aphids
  - Wire worms
  - Butterflies
  - Both a & b
86. Choose the correct
- Larval period of silk worm is - 30 to 35 days
  - muga silk colour – copperish
  - Sualu is host tree used for rearing of muga silk
  - Both a & b
87. Scientific name of oak tasar is \_\_\_\_\_
- Antherea assama*
  - Antherea proylei*
  - Antherea mylitta*
  - Bombyx mori*
88. As Chandrikes is for mulberry silk worm, Jali is for \_\_\_\_\_
- Muga silkworm
  - Eri silk worm
  - Tasar silk worm
  - Oak tasar silkworm
89. Eri silk is \_\_\_\_\_ in colour
- White
  - Copper
  - yellow creamy
  - golden

90. Tasar silkworm is
- Univoltine
  - Bivoltine
  - Multivoltine
  - All
91. Central Silk Board is at \_\_\_\_\_ and work under \_\_\_\_\_
- Hyderabad, Ministry of textiles
  - Banglore, Ministry of agriculture and farmers welfare
  - Banglore, Ministry of textiles
  - Hyderabad, Ministry of agriculture and affairs
92. Silk filament is composed of \_\_\_\_\_
- 2 Fibroin and 2 sericin
  - 2 Fibroin and 1 sericin
  - 1 Fibroin and 2 sericin
  - Not fixed
93. Newly hatch larva of silkworm is known as
- Kegos
  - Ants
  - Kegs
  - All
94. Which of the following is example of intraspecific competition
- Flour beetle
  - Aphids
  - Larva of american bollworm
  - All
95. Highest Lac Producing state is \_\_\_\_\_
- Chattisgarh
  - MP
  - UP
  - Punjab
96. Choose the correct
- Emergence of nymphs in lac insect is called absconding
  - Nymphs are globular in shape, deep yellow in colour
  - Resinous covering over lac insect is called cell
  - Lac belongs to order Diptera
97. Colour of shelllac is \_\_\_\_\_
- Red
  - orange to pale yellow
  - white
  - green
98. Choose the correct sequence
- Scrapped lac- crushed lac-shel lac-grainlac
  - Crushed lac- scrapped lac-grain lac-shellac
  - Scrapped lac-crushed lac- grain lac-shelllac
  - Seed lac-shel lac-crushed lac-scrapped lac
99. Colouring agent used in lac is \_\_\_\_\_
- copper sulphide
  - Arsenic sulphide
  - Arsenic iodide
  - Potassium iodide
100. Lac is marketed in form of \_\_\_\_\_
- shell lac
  - Button lac
  - Stick lac
  - Brood Lac
101. Holococera is \_\_\_\_\_
- Parasite
  - Predator
  - Parasitoid
  - None



102. Fecundity of lac insects is \_\_\_\_\_
- 300-400
  - 200-300
  - 100-200
  - 300-500
103. Choose the wrong
- lac-68% resin
  - Molemma- 70% shellac
  - IINRG- Ranchi
  - 1 DFL of mulberry silkworm - 300 eggs
104. Eight months crop is \_\_\_\_\_
- Aghani
  - Jethwi
  - Baisakhi
  - Katki
105. Resin gland is distributed all over the body except \_\_\_\_\_
- Mouth
  - Anus
  - Breathing pores
  - All
106. Choose the correct
- India - 2nd in lac
  - lac insects - 4 stages in life cycle
  - Seed lac – Chowri
  - Eublemma amabilis-Black lac moth
107. Choose the wrong
- Female lac-globular
  - Male lac- boat shaped
  - Nymphs - red colour
  - seed lac- Phunki
108. \_\_\_\_\_ cause resurgence of red spider mites \_\_\_\_\_
- Pyrethroids
  - Carbofuran
  - Acephate
  - Phorate
109. Choose the correct
- Gause principle is also known as competitive removal principles.
  - In silk worm long day induces diapause eggs.
  - In aphids short day produces sexual forms
  - In aphids long day produces sexual forms
  - Both b and c
110. White grub multiply best in \_\_\_\_\_
- loose sandy soil
  - heavy clay soil
  - loam soil
  - any of them
111. Excess rainfall controls \_\_\_\_\_
- Aphids
  - Diamond back moth
  - white grubs
  - both a and c
  - All
112. Choose the correct
- Increased N decrease leaf folder incidence in rice
  - Cambodia cotton favours stem weevil
  - Deltamethrin cause resurgence of BPH in rice
  - Vadalia beetle is predator of wooly aphid
113. which is not example of exotic pest \_\_\_\_\_
- potato tuber moth
  - coffee berry borer
  - spiraling white fly
  - Apple eriophyid mite

114. Choose the correct pair \_\_\_\_\_
- a) Occasional pest- Rice case worm
  - b) Key pest- Cotton bollworm
  - c) ETL Is lower than EIL
  - d) ALL
115. Poison Bait for house fly \_\_\_\_\_
- a) Formaline + sweet milk
  - b) unfermented banana + milk
  - c) cheese + Sugar+ insecticide
  - d) all
  - e) a and c
116. Choose the correct
- a) female aedes= dengue
  - b) mosquito= Culicidae
  - c) Culex=filariasis
  - d) Citronella oil= mosquito attractant
117. Conjunctivitis is transmitted by \_\_\_\_\_
- a) sand fly
  - b) rat fleas
  - c) eye flies
  - d) mosquito
118. Choose the correct
- a) Stable fly- *Gastrophilus intestinalis*
  - b) Infestation by maggots is known as river blindness
  - c) Dog fly- Tachinidae
  - d) Hippobosca- ectoparasites
119. Family of warble fly \_\_\_\_\_
- a) Cliphoridae
  - b) Oestridae
  - c) Haematopinidae
  - d) Hectosyllidae
120. *Boophilus macropophilus* is
- a) Mange mite
  - b) Poultry tick
  - c) Cattle tick
  - d) Flea
121. *Cochliomyia hominivorax* is \_\_\_\_\_ and related to \_\_\_\_
- a) screw worm, chitin inhibitor
  - b) warble fly, chitin inhibitor
  - c) Blow fly, chemosterilants
  - d) warble fly, pyrethroids
122. Central Insecticide Board is headed by \_\_\_\_\_ and has \_\_\_\_ members \_\_\_\_\_
- a) Director General of ICAR, 28
  - b) Agriculture Minister. 27
  - c) Director General of Health Services, 28
  - d) Toxicology inspector, 5
123. Choose the correct
- a) Insecticide act implemented in year 1968
  - b) Registration committee head- Director general (crop science), ICAR
  - c) Red hairy caterpillar- Flame throwers
  - d) Plant Quarantine Order- 2000
124. Which one is not exotic pest \_\_\_\_\_
- a) Giant african snail
  - b) Spiraling white fly
  - c) Rice case worm
  - d) Subabul psyllid
125. Federal Insect Pest Act was passed in year \_\_\_\_\_ against \_\_\_\_\_
- a) 1905, Apple wooly aphid
  - b) 1912, Apple wooly aphid
  - c) 1905, San Jose scale
  - d) 1912, San Jose scale
126. Which is covered by DPPQS \_\_\_\_\_
- a) CIB and RC
  - b) Central Insecticide Board
  - c) Plant Quarantine
  - d) All the above

127. Nodal Agency for issuing import permit is \_\_\_\_\_ institute of ICAR.
- NBPGR, New Delhi
  - DPPQS
  - Central Insecticide Board
  - NIPHM
128. Supply of germplasm outside the country is done per the provisions of \_\_\_\_\_
- Biological diversity act
  - Plant variety act
  - Export and import act
  - None
129. Choose the wrong pair \_\_\_\_\_
- US Plant Quarentine Act – 1912
  - DPPQS – Delhi
  - DIPA- 1914
  - Survey- repeated after 3 to 5 years
130. Pesticide Management bill \_\_\_\_\_
- 2002
  - 2004
  - 2006
  - 2008
131. Choose the correct statement \_\_\_\_\_
- EIL is lower than ETL
  - Survey is conducted to study distribution and abundance of pest species.
  - EIL is known as Action Threshold Level
  - Corona is epidemic disease.
132. EIL IS C/VID, UNIT OF D IS \_\_\_\_\_
- Rs/tonne
  - tonne reduction/ha
  - Rs/ha
  - insects/ha
133. Choose the wrong statement \_\_\_\_\_
- The begining point of EIL is known as Gain threshold
  - The pest density where marginal crop revenue is equal to management cost is known as ETL
  - Crop value and management cost are two important factors deciding ETL and EIL.
  - Population density at which crop measures is taken is EIL.
134. Choose the correct pair \_\_\_\_\_
- Rice thrips- Leaf Margin notched
  - Ash weevils- young terminal leaves drying in nursery
  - Leaf silvered and wilting- onion thrips
  - Aphids- many shot holes on leaves
135. Choose the correct
- Large irregular shaped holes on leaves - Tortorise beetles
  - White parallel streaks on long axis- Rice hispa
  - Grazing like cutting of seedlings- Rice cut worm
  - All
  - Both a & b
136. Choose the wrong
- Little leaf of Brinjal - Cestius phycitis
  - Semi circular leaf cut on rose- Megachile sp.
  - Mango Leaves webbed together- mango fruit fly
  - both b and c

137. Coconut frond with V shape cut is due to
- Black headed caterpillar
  - Rhinoceros beetle
  - Coconut mite
  - Helicoverpa
138. Choose the correct pair \_\_\_\_\_
- Phyllody- Orosius albicinctus
  - Flared Squares- Pink bollworm
  - Earhead with chaffy grains-Calocoris sp.
  - both a and c
139. Bored pods is not symptom in case of \_
- Gram borer
  - Plume moth
  - Rice earhead bug
  - Maize ear worm
140. Choose the wrong
- Dead hearts - Rice stem borer
  - Onion leaf- onion thrips
  - Extra tillering- sorghum shoot fly
  - Pin head size hole on tobacco- Lasioderma sp.
141. Pollu beetle is pest of \_\_\_\_\_
- Cardamom
  - Pulses
  - Pepper
  - Banana
142. weevils are not main pest in which crops
- Banana
  - sweet potato
  - cotton
  - Pulses
143. Tree trunk with eaten bark, frass and silk tube \_\_\_\_\_
- mango stem borer
  - cotton shoot weevil
  - mango bark borers
  - stem gall fly
144. Choose the wrong
- Roots with extensive swellings- root knot
  - roots with small cyst-Heterodera
  - Seedling with swollen hollow stem- Tobacco cut worm
  - Roots stunted and bushy- Lesion nematode
145. ETL for rice thrips \_\_\_\_\_
- 5% affected seedlings
  - 10% affected seedlings
  - 20% affected
  - 1-2%affected seedlings
146. Choose the correct
- ETL for GLH = 10/hill at reproductive stage
  - ETL for GLH= 10/hill at vegetative stage
  - ETL for rice ear head bug at milky stage= 16/100 panicle
  - both a and c
147. Choose the wrong
- Drying- physical method
  - Cold treatment- FRUIT FLY
  - ETL for cotton aphids- 30%
  - Antixenosis- Host plant resistance
148. Diflubenzuron is \_\_\_\_\_
- Herbicide
  - Chemosterilant
  - Chitin synthesis inhibitor
  - Juvenile hormone
149. Raking up and hoeing of soil around mango is to destroy pupa of \_\_\_\_\_
- mango webber
  - mango stem borer
  - mango fruit flies
  - mango mite

150. which is not cultural practices of pest control \_\_\_\_\_
- Deep ploughing
  - Drying
  - Alley ways
  - High seed rate
151. Choose the correct
- Bone fires- sugarcane scale
  - Trimming of bund- BPH
  - High seed rate- sorghum stem borer
  - Puddling- Rice mealy bug
152. Water management is not suitable culture practice for \_\_\_\_\_
- Case worm
  - BPH
  - Rice stem borer
  - Groundnut leaf miner
153. Choose the correct trap crop for DBM In cabbage
- Castor
  - Mustard
  - Tomato
  - Okra
154. Choose the wrong
- High seed rate- sorghum shoot fly
  - Plant density – BPH
  - Early sowing- Red pumpkin beetle
  - Intercropping = Cotton + Bhindi to suppress fruit borer
155. Which is used most commonly to sterilise insects in laboratory \_\_\_\_\_
- CO 60
  - CO 55
  - CO 50
  - CO 45
156. Choose the wrong
- Flame throwers- Locust
  - Burning torches- RHC
  - Hot water treatment- White tip nematode
  - Sun drying- stored grain pest
  - None
157. Use of DRIE- DIE dust comes under \_\_\_\_\_ control \_\_\_\_\_
- Cultural
  - Mechanical
  - Physical
  - Biological
158. Hopper Dozzer is used for \_\_\_\_\_
- RHC
  - Locust nymph
  - BPH
  - Mites
159. Choose the correct
- Hooking with iron hook-coconut Black Headed caterpillar
  - Shaking of neem tree- June beetles
  - Passing rope across field to dislodge- Caseworm
  - Both a & c
160. Choose the wrong
- Wrapping fruits- Pomegranate fruit borer
  - Tin barriers- mealy bug
  - Trenching- RHC
  - Entoletter- centrifugal force
161. Choose the correct
- Keet -O- Flash= Black light trap
  - Mercury Vapour Light Trap- Robinson trap
  - Blue sticky trap- Thrips
  - All



162. Fish Meal Trap is used against \_\_\_\_\_ and use insecticide\_\_\_\_\_
- Root nematode, pyrifos
  - Sorghum stem borer, malathion
  - sorghum stem borer, DDVP
  - Sorghum shoot fly, DDVP
163. Insects are mostly attracted to \_\_\_\_\_light \_
- Green
  - Blue
  - Yellow
  - Black
164. Pitfall Traps are used against \_\_\_\_\_
- ground beetles
  - collembolans
  - spiders
  - All
165. Light trapping of insects is \_\_\_\_\_ control
- Cultural
  - Legal
  - Mechanical
  - Physical
166. Light traps is used for collection of \_\_\_\_\_ insects
- negatively phototropic
  - positive phototropic
  - geotropic
  - hydrotropic
167. Aim of IPM is \_\_\_\_\_
- Strengthening host
  - Billing the pest
  - Increasing Natural enemies of pest
  - keeping pest below EIL
168. Pheromone traps can be used for\_\_\_\_\_ pest population
- Killing
  - collection
  - monitoring
  - both c and d
169. Which is odd one \_\_\_\_\_
- Flooding
  - Drainage
  - Plant density
  - Light traps
170. Alternate wetting and drying is to control \_\_\_\_\_
- Green leafhopper
  - BPH
  - Wheat aphid
  - Rice hispa
171. Neem Seed Kernel Extract is \_\_\_\_\_ control
- Cultural
  - Physical
  - Botanical
  - Biological
172. Choose the correct answer \_\_\_\_\_
- Temporary Resistance - Genetic resistance
  - Oligogenic - Major gene resistance
  - Polygenic - Vertical resistance
  - Field Resistance- Vertical Resistance
173. Choose the odd one out \_\_\_\_\_
- Horizontal resistance
  - Host escape
  - Induced resistance
  - Ecological Resistance
174. Choose the odd one out \_\_\_\_\_
- Antixenosis
  - Antibiosis
  - Pheromones
  - Tolerance

175. Choose the correct pair
- Antixenosis- Latin word
  - Trichomes in cotton- resistance to white fly
  - Aphids - prefer green colour
  - Both a AND b
176. DIMBOA is example of-
- Antixenosis
  - Antibiosis
  - Tolerance
  - All
177. Choose the wrong pair \_\_\_\_\_
- DIMBOA - European corn borer
  - Sinigrin - Myzus aphid
  - Gossypol-American Bollworm
  - Salicylic acid- Cucurbit fruit fly
178. Choose the correct
- Silica deposit-Rice stem borer
  - Isothiocyanates- cruciferous pest
  - TKM-6 =Yellow stem borer
  - All
179. Choose odd one out \_\_\_\_\_
- Wheat
  - RESCUE
  - IR-36
  - Hessian Fly
180. Antixenosis was proposed by \_\_\_\_\_
- Painter
  - Brues
  - Kogan and Ortman
  - Fraenkel
181. Plant pass the susceptible stage quickly in
- Host escape
  - Host evasion
  - Tolerance
  - Resistance
182. Presence of nutritional value of host plant helps for \_\_\_\_\_
- Host suitability
  - Host recognition
  - Host escape
  - Host evasion
183. Cryptolaemus sp. was introduced from \_\_\_\_\_ against \_\_\_\_\_ in 1898
- Australia, Coffee scale
  - Europe, Coffee scale
  - California, Tea bug
  - Australia, Cotton cushiony scale
184. Choose the wrong
- Red Locust-Mynah bird
  - Vedalia beetle- Cotton cushion scale
  - Apantales- cabbage butterfly
  - Aphelinus mali- San jose scale
185. Choose the odd one \_\_\_\_\_
- Telonomus
  - lady bird
  - Trichogramma
  - Apantales
186. Choose the correct about ichneumonidae
- 1 recurrent vein mostly
  - 2 segmented trochanter
  - short ovipositor
  - egg parasitoids
187. Choose the odd one out \_\_\_\_\_
- Eriborus
  - Brachymeria
  - Trichogramma
  - Trichospilus
188. Family of Brachymeris nephandidis is
- Eulophidae
  - Chalcididae
  - Braconidae
  - Bethylidae

189. Choose the parasitoid family \_\_\_\_\_
- a) Reduviidae
  - b) Tachinidae
  - c) Pentatomidae
  - d) Belostomidae
190. *Epicrania melanoleuca* attack
- a) Egg
  - b) nymph
  - c) adult
  - d) both c and d
191. Choose the odd one out \_\_\_\_\_
- a) Staphylinidae
  - b) Chrysopidae
  - c) Carabidae
  - d) Ichneumonidae
192. *Epicrania* is \_\_\_\_\_
- a) Scavenger
  - b) Predator
  - c) Ectoparasitoid
  - d) endoparasitoid
193. *Epicrania* is biological agent of \_\_\_\_\_
- a) Sugarcane scale
  - b) BPH
  - c) Aphid
  - d) Sugarcane pyrilla
194. *Campoletis chloridae* belong to family \_
- a) Chalcididae
  - b) Eulophidae
  - c) Vespidae
  - d) Ichneumonidae
195. Choose the correct
- a) Paul muller - DDT
  - b) Spinosyn- marine aanelid
  - c) Avermectins- Bacteria
  - d) both a and c
196. PAUL MULLER awarded Nobel prize in \_
- a) 1938
  - b) 1958
  - c) 1948
  - d) 1946
197. Choose the wrong
- a) Silent spring-1962
  - b) DDT- 1st generation insecticide
  - c) LC 50= PPM
  - d) LC50= mg/kg body weight
198. Toxic effect is produced by single dose of toxicant \_\_
- a) Acute toxicity
  - b) Chronic toxicity
  - c) Knock down
  - d) None
199. Which one of following is second generation insecticide \_\_\_\_\_
- a) BHC
  - b) DDT
  - c) Carbamate
  - d) JH mimics
200. Father of Host plant resistance -
- a) Knippling
  - b) Snodgrass
  - c) Painter
  - d) Ortman
201. rice meal moth is used for multiplication of \_\_\_\_\_
- a) Apantales
  - b) Trichogramma
  - c) Chilonis
  - d) All
202. Choose the wrong
- a) Lantana bug- Tephritid fly
  - b) Opuntia- *Cactoblastis cactorum*
  - c) Water hyacinth- *Neochetina* spp
  - d) Alligator weed- Flea beetle

203. Choose the correct
- a) Carrot weed – beetle
  - b) Water fern- Cryptobagus
  - c) Ak grasshopper- Calotropis
  - d) All
204. Which of the following is penetrating microbes-
- a) Nematode
  - b) Virus
  - c) Fungi
  - d) Bacteria
  - e) Both a & d
205. Choose the correct about NPV \_\_\_\_\_
- a) globular shaped bodies
  - b) Baculoviridae family
  - c) site of multiplication is cell cytoplasm of fat body and trachea
  - d) both b and c
206. Baculoviruses are \_\_\_\_
- a) ds rna
  - b) ds dna
  - c) ss rna
  - d) ss dna
207. Incubation period of NPV is \_\_\_\_\_
- a) 2 days
  - b) 10 days
  - c) 4-6 days
  - d) 2 weeks
208. NPV of spodoptera is mass cultured using \_\_\_\_\_
- a) Castor leaves
  - b) Sorghum grains
  - c) synthetic diet
  - d) Bengal gram
209. what is correct about CPV \_\_\_\_\_
- a) Rod shaped virions
  - b) site of multiplication is cytoplasm of midgut epithelium
  - c) Found singly in occluded bodies
  - d) Both b and c
210. Choose the correct
- a) GV- cabbage looper
  - b) CPV- sugarcane early shoot borer
  - c) NPV- spodoptera
  - d) 1 LE= 5\*10<sup>9</sup> POB
211. Choose the odd one out \_\_\_\_\_
- a) Elcar
  - b) DIPEL
  - c) Gypcheck
  - d) Agrovir
212. Which is not related to milky disease \_\_\_\_
- a) Bacillus papillae
  - b) Scarabaeidae
  - c) HALT
  - d) DOOM
213. Choose the correct pair \_\_\_\_\_
- a) Bt var kurstaki- caterpillars
  - b) Bt var thurigiensis- fly
  - c) BT var. tenebrionsis- mosquito
  - d) both a and b
214. Which of following is spore forming obligate bacteria \_\_\_\_\_
- a) *Bacillus cereus*
  - b) *Bacillus sphaericus*
  - c) *Bacillus papillae*
  - d) *Bacillus thurigiensis*
215. Choose the correct
- a) Bacteria- tree top disease
  - b) Bt - Delta endotoxins
  - c) Biolep - cotton bollworms
  - d) both b and c

216. Choose the wrong pair \_\_\_\_\_
- a) Green muscardine- BPH, rhinoceroes
  - b) Hirsutella - Coccus viridis
  - c) White Muscardine- Silkworms
  - d) Green Muscardine- Carrot Broth Method
217. Which fungus is used against citrus mite
- a) Verticillium
  - b) Metarhizium
  - c) Beauveria
  - d) Hirsutella
218. DD 136 is related to \_\_\_\_\_
- a) Nematodes
  - b) Protozoa
  - c) Rickettsiae
  - d) Fungi
219. Lorsch disease is related to \_\_\_\_\_
- a) Bacteria
  - b) Protozoa
  - c) Rickettsia
  - d) Fungi
220. Choose the wrong pair \_\_\_\_\_
- a) Msndibulosuctorial parts- antlion grub
  - b) Mask - naiads of dragon fly
  - c) Horny proboscis- dragon fly
  - d) Raptorial leg- preying mantis
221. What is correct about predator \_\_\_\_\_
- a) Short life cycle
  - b) requires 1 host
  - c) stronger and larger than prey
  - d) ovipositor well developed
222. Choose the correct about predatory stages of insects \_\_\_\_\_
- a) Robber fly - adult and maggot
  - b) Hover fly- Maggot
  - c) Aphid lion- adult
  - d) Lady bird- only adults
223. Which is related to *Cryptolaemus montrouzieri* \_\_\_\_\_
- a) Predator
  - b) Grapevine mealy bug
  - c) Parasitoid
  - d) both a and b
224. Many individuals of same species of parasitoid attack same host \_\_\_\_\_
- a) Multiple parasitism
  - b) Cleptoparasitism
  - c) Autoparasitism
  - d) Super parasitism
225. Which is not larval parasitoid \_\_\_\_\_
- a) Bracon sp
  - b) Platygaster
  - c) Brachymeria
  - d) Eriborus
226. *Encarsia formosa* attack \_\_\_\_\_ stages of white fly
- a) Nymph
  - b) Adult
  - c) nymph and adult
  - d) pupa and adult
227. Choose the correct
- a) Apantales- solitary parasitoid
  - b) Isotima javensis- larval pupal parasitoid
  - c) inoculative release- chemical control
  - d) Chelonus Blackburnii- egg parasitoid
228. Biological control of sugarcane early shoot borer \_\_\_\_\_
- a) Isotima
  - b) Strumiopsis
  - c) Eucelatoria
  - d) Epicrania

229. Which is pupal parasitoid \_\_\_\_\_
- a) Cotesia
  - b) Campotelis
  - c) Tetrastichus
  - d) Goniozus
230. Biological control of aphids \_\_\_\_\_
- a) Aphelinus mali
  - b) Lady bird beetles
  - c) Antlion grubs
  - d) All
231. Theme of International Day of Biodiversity 22 May 2020
- a) Our solutions are in nature
  - b) Our biodeversity, our food, our health
  - c) save the bees
  - d) save the biodiversity
232. Choose the correct
- a) Molluscicide- Anthraquinones
  - b) Acaricide- Copper oxychloride
  - c) Rodenticide- Zinc phosphide
  - d) Herbicide- Endosulfan
233. Fenvalerate is \_\_\_\_\_
- a) systemic with contact action
  - b) non systemic with contact action
  - c) non systemic with stomach action
  - d) Both b& c
234. Choose the wrong
- a) Chitin synthesis inhibitor - Diflubenzuron
  - b) Respiratory poison- HCN
  - c) Nerve poison- Activated clay
  - d) Protoplasmic poison- Arsenicals
235. Choose the odd one on basis of chemical nature \_\_\_\_\_
- a) Malathion
  - b) Quinalphos
  - c) Pyrethrum
  - d) Fenthion
236. Choose the wrong pair \_\_\_\_\_
- a) Aldicarb- carbamate
  - b) nereistoxin- animal origin
  - c) Rotenone- plant origin
  - d) Aldrin- synthetic pyrethroids
237. Which of insecticide is derived from actinomycetes \_\_\_\_\_
- a) Imidacloprid
  - b) Spinosad
  - c) Avermectin
  - d) Vertimac
238. Amount of active gradient of granule ranges from\_\_\_\_
- a) less than 2%
  - b) 2-10%
  - c) 15-95%
  - d) less than 1 %
239. Choose the correct statement about warning of insecticides \_\_\_\_\_
- a) warning symbol Is a diamond shaped with colour in upper triangle and signal in lower triangle.
  - b) skull and cross bone sign is signal for highly toxic insecticides.
  - c) Higher the LD50 value,less the toxicity of insecticides.
  - d) Both a and C
240. Choose the correct about formulation \_\_\_\_\_
- a) Dust= active ingredient and carrier
  - b) WP = Toxicant+solvent+ emulsifier+ stabilizing agent.
  - c) WP= Active ingredient + inert dust+ surfactant
  - d) Both a & c

241. Choose the wrong pair \_\_\_\_\_
- Extremely toxic= Bright red
  - Slightly toxic= Bright yellow
  - Extremely toxic= Oral LD50 range from 1 -50 mg/kg
  - Insecticide Act came in force – 1971
242. Which of following is not green house gas \_\_\_\_\_
- CO<sub>2</sub>
  - Methane
  - SO<sub>2</sub>
  - NO<sub>2</sub>
243. Which is wrong about IPM in sugarcane \_\_\_\_\_
- Use of GV and Strumiopsis for internode borer
  - Detrashing for leaf hopper
  - Trash mulching for early shoot borer
  - Use excess Nitrogen to avoid leaf hopper.
244. Choose the correct
- ETL for rice earhead bug= 5 bugs/100 panicle at flowering stage
  - ETL for rice stem borer= 2% white ears
  - ETL for cotton bollworms= 10% bolls damaged
  - All
245. Choose the wrong statement \_\_\_\_\_
- Use of Yellow sticky traps are used for white fly.
  - NPV is used for spodoptera
  - Use of Neem blended urea in IPM as it helps in fast release of urea
  - Ethion has ovicidal property.
246. Use of excess N cause increase in population of \_\_insects \_\_\_\_\_
- BPH in rice
  - Leaf folder in Rice
  - Leaf hopper in sugarcane
  - All
247. What is correct about IPM \_\_\_\_\_
- Chemical control is principal method of control in IPM.
  - The Term IPM was coined by Council on Environment Quality During 1972.
  - Basis for control in IPM is ETL
  - both band c
248. Which is not the basic parameters used to assess population growth \_\_\_\_\_
- Innate capacity for increase
  - Net reproductive rate
  - Mean Generation time
  - None
249. Bacillus thurigiensis is\_\_\_ bacteria \_\_\_\_\_
- Gram positive endotoxin producing, contact poison
  - Gram negative endotoxin producing, stomach poison
  - Gram positive endotoxin producing, stomach poison
  - Gram negative non spore producing bacteria
250. Alpha amylase inhibitor have been used for producing transgenic \_\_\_\_\_resistant to lepidoptera insects \_\_\_\_\_
- Tobacco
  - Tomato
  - both a and b
  - Pea

251. Choose the correct option \_\_\_\_
- a) Pea lectin gene- binds to chitin in midgut and prevent nutrient uptake.
  - b) Cow pea Trypsin inhibitor - Protein inhibitor
  - c) alpha amylase inhibitor affects process of excretion in target
  - d) both a and b
252. Transgenic plants can be produced by addition of \_\_\_\_genes \_\_\_\_
- a) alpha amylase
  - b) lectins
  - c) Enzymes like chitinase enzyme genes
  - d) both b and c
253. Electrodyne sprayer is type of \_\_\_\_ sprayer \_\_\_\_
- a) High volume
  - b) Low volume
  - c) Ultra Low volume
  - d) None
254. Pralinage is related to which crop \_\_\_\_
- a) Coconut
  - b) Sugarcane
  - c) Banana
  - d) Sorghum
255. Stem injection is used for control pest of\_
- a) Coconut
  - b) Banana
  - c) Sugarcane
  - d) Both a and b
256. Choose the wrong
- a) Stem injection – Monocrotophos
  - b) Swabbing- Coffee borer
  - c) Castor rotten cake- coconut rhinoceroes beetle
  - d) Teepol- emulsifier in neem botanicals
257. Vitamin K is antidote for \_\_\_\_
- a) OP
  - b) Carbamates
  - c) Organo chlorines
  - d) Zinc phosphide
258. Choose the wrong for universal antidote
- a) activated charcoal- 3.5 g
  - b) Magnesium oxide - 3.5 g
  - c) Tannic acid- 7g
  - d) both a and c
259. Antidote for Organophosphate insecticides \_\_\_\_
- a) 2 -PAM
  - b) Sodium bicarbonate
  - c) Atropine suphate
  - d) All
260. Full Form of IRAC \_\_\_\_
- a) Insecticide resistance approval committee
  - b) Insecticide Resisitance Action community
  - c) Insecticide Resistance Action Committee
  - d) Integrated Resistance action committee
261. Choose the odd one out \_\_\_\_
- a) Spray lance
  - b) Hopper
  - c) Tank
  - d) Nozzle
262. Choose the correct
- a) Stainer- Definate spray pattern
  - b) Hollow cone nozzle- Herbicide spray
  - c) Knapsack sprayer- fruit trees and tall trees
  - d) Bird scarer - Calcium Carbide



263. Bozzle is combination of \_\_\_\_\_ and is part of \_\_\_ sprayer \_\_\_\_
- Bottle and nozzle, Knapsack
  - Bottle and nozzle, Electrodyn sprayer
  - Blower and nozzle, Foot
  - None
264. Choose the wrong pair \_\_\_\_
- Flame throwers- locust
  - Soil injecting gun- Nematodes
  - Baiting of Zn Phosphide with food- 1:20
  - Foot sprayer- Pedal Pump
265. Choose the wrong about Zinc phosphide
- available as zintox
  - produce phosphine gas in target organism
  - Chronic poison
  - Rodenticide
266. What is correct about Bromodiolone \_\_\_\_
- Available as Moosh -Moosh
  - Chronic poison
  - anticoagulant rodenticides
  - All
267. Choose the wrong
- Dicofol- Kelthane
  - Ethion - Acaricide
  - Sulfur- storage mite
  - Aldicarb- Vapam
268. Nuracron is trade name for \_\_\_\_
- Oxamyl
  - Triazophos
  - Monocrotophos
  - Fenthion
269. Which is correctly matched \_\_\_\_
- Phorate- Furadan
  - Aldicarb- Thimet
  - Metham sodium- Vepam
  - Oxamyl- Nuracorn
270. \_\_\_\_\_ cause resurgence of BPH in rice
- Quinalphos
  - Phorate
  - Carbofuran
  - Both a and b
271. Which of following is not allelochemical \_
- Pheromone
  - Apneumone
  - Synomone
  - Antimone
272. Periplanone is \_\_\_\_
- Aggregation
  - Alarm
  - Sex pheromone
  - Epidiactic pheromone
273. Which of folllowing is sex pheromone of Spodoptera litura \_\_\_\_
- Litlure
  - Trimedlure
  - Bombykol
  - Gossyplure
274. Type of Pheromone in Bark beetles \_\_\_\_
- Sex
  - Aggregation
  - Alarm
  - Trail
275. Pheromones are also called as \_\_\_\_
- Ecto hormones
  - Intra specific allelochemicals
  - Interspecific allelochemicals
  - Both a and b
276. The compounds function in regulation of population density by dispersion of individuals \_\_\_\_
- Epidiactic pheromone
  - Alarm
  - Sex pheromone
  - Territorial

277. Aphrodisiacs is related to \_\_\_ pheromone
- Sex
  - Alarm
  - Aggregation
  - Trail
278. The chemical nature of alarm pheromone in aphids \_\_\_\_
- Terpenes
  - Aldehydes
  - Formic acid
  - Caproic acid
279. Chemical which give advantage to receiver but not emitter \_\_\_\_
- Kairomone
  - Allomone
  - Synomone
  - Apneumone
280. Gland secreting trail pheromone in termites \_\_\_\_
- Cornicles
  - sternal gland
  - tibial gland
  - cephalic gland
281. Which of following is hydraulic energy sprayer \_\_\_\_
- Mist blower
  - Knapsack sprayer
  - Duster
  - wheel barrow sprayer
282. Releaser pheromones act through \_\_\_\_\_ sensilla \_\_\_\_
- Olfactory
  - Gustatory
  - coelomic sensilla
  - Thermoreceptors
283. Choose the correct
- Looplure- Cabbage looper
  - Cotton boll weevil - male produces pheromones
  - Karlson and Butenandt- Pheromones
  - All
284. Sex pheromones are used in \_\_\_\_
- Monitoring
  - Mass Trapping
  - Mating disruption
  - All
285. Choose the odd one out \_\_\_\_
- Ipsenol
  - Frontalin
  - Dimethyl decanol
  - Helilure
286. Alarm pheromone causes aggression in \_
- Aphids
  - Termites
  - Ants
  - worker bees
287. Choose the correct pair about alarm pheromones \_\_\_\_
- Termites- terga
  - Aphids- Cornicles
  - Ants- Formic acid
  - Both b and c
288. example of Allomone \_\_\_\_
- Repellent
  - Attractant
  - Reflex Bleeding
  - both a and c
289. sterility method of insect control was first studied by E.F knipling on \_\_\_\_\_
- Screw worm fly,1937
  - warble fly,1937
  - Bot fly,1936
  - None

290. Choose the odd one out \_\_\_\_\_

- a) TEPA
- b) Folic acid
- c) Thio urea
- d) Diflubenzuron

291. Juvenile hormone found more in adult insects \_\_\_\_\_

- a) JH 1
- b) JH 2
- c) JH 3
- d) JH 4

292. Which is not related to paper factor \_\_\_\_\_

- a) william slama
- b) Pyrrochoris bug
- c) balsam fir tree
- d) 1955

293. Choose the wrong match \_\_\_\_\_

- a) Methoprene- JH mimic
- b) Dimilin- ovicidal effect
- c) Piperonyl Butoxide- Anti JH
- d) Ecdysone- neotinin

294. Choose the wrong paired antifeedant \_\_\_\_\_

- a) Baygon- cotton boll weevil
- b) Triazenes- chewing insect like caterpillar, beetles
- c) Pyrethrum- desert locust
- d) Solanine- Leaf hoppers

295. Choose the correct statement \_\_\_\_\_

- a) Antifeedants act through inhibiting olfactory receptors
- b) Attractants influence both gustatory and olfactory receptors
- c) Attractants influence gustatory receptors only
- d) both a and b

296. Methyl eugenol is \_\_\_\_\_ for fruit fly \_\_\_\_\_

- a) Antifeedant
- b) Repellent
- c) Attractant
- d) both a and b

297. Choose the odd one out \_\_\_\_\_

- a) Sugar and molasses
- b) Propylmercaptan
- c) Isothiocyanates
- d) Benzyl Benzoate

298. White or yellow phosphorus and sweet syrup is poison bait for \_\_\_\_\_

- a) Fruitfly
- b) Cockroach
- c) Ants
- d) Bees

299. Choose the correct pair \_\_\_\_\_

- a) Tar bands- Barrier repellent
- b) Wax- contact stimuli repellent
- c) Citronella oil- Mosquitoes
- d) All

300. Dimethyl pthlate is synthetic repellent used against \_\_\_\_\_

- a) Mites
- b) Mosquitoes
- c) Bees
- d) Cockroach

301. Organophosphates and carbamates act by \_\_\_\_\_

- a) GABA gated chloride channel blockers
- b) AchE inhibitors
- c) Sodium channel modulators
- d) JH mimic

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## INSECTA PART B

1. The first detailed classification of insect was done by \_\_\_\_
  - a) Sushruta
  - b) Umaswati
  - c) Charaka
  - d) Linnaeus
2. Which is correctly matched \_\_\_\_
  - a) 10 th edition of systema nature- 1755
  - b) Account of lac insect- Kerr in 1785
  - c) Zoological survey of India- 1906
  - d) 1st entomologist to govt of india- 1901
3. Choose the wrong
  - a) 1st editon systema nature- 1735
  - b) insects originate-250-500 mya
  - c) 90% of all living animals are insects
  - d) First entomologist to do an extensive study of insect is - Carl Linnaeus
4. Special account of termites of Thanjavur district is written by \_\_\_\_
  - a) J. C Fabricius
  - b) J.G. Koeing
  - c) Linnaeus
  - d) Maxwell Lefroy
5. Choose the wrong
  - a) Asiatic society of Bengal – 1785
  - b) Indian Museum – 1875
  - c) Indian Lac Research Institute- 1939
  - d) Bombay Natural History society- 1883
6. The earliest record of biological pest control(ants)in India published by \_\_\_\_
  - a) Horsfield
  - b) Blandford
  - c) Hampson
  - d) Rothney
7. Choose the right \_\_\_\_
  - a) Entomological part of Fauna of British India was started in 1883
  - b) A catalouge of Lepidopteran Insects by Buchanan
  - c) An epitome of natural history of insects of india was written by Edward Denovan.
  - d) All
8. Choose the odd one out \_\_\_\_
  - a) Indian insect Pest
  - b) Indian Insect Life
  - c) H.S. Pruthi
  - d) Maxwell Lefroy
9. Some South Indian Insects is written by \_\_\_\_\_ in \_\_\_\_
  - a) E.P. Stebbing,1914
  - b) T.B. Fletcher,1914
  - c) E.P Stebbing,1912
  - d) T. B Fletcher,1916
10. 1<sup>st</sup> President of Entomological Society of India was \_\_\_\_
  - a) H.S Pruthi
  - b) Afzal Hussain
  - c) Ramakrishna Ayyar
  - d) M. S. Manni
11. Choose the wrong
  - a) DPPQS- 1946
  - b) FRI-1906
  - c) ZSI-1916
  - d) Entomological Society of India- 1939
12. 1<sup>st</sup> Imperial Forest entomologist was \_\_\_\_
  - a) T.B Fletcher
  - b) E.P Stebbing
  - c) Lionel de Nicevelle
  - d) Lefroy

13. Earliest record of insects with only 12 indian insects is \_\_\_\_
- Systema naturae
  - Indian Insect Pest
  - Indian Insect Life
  - Fauna of British India series
14. Choose the wrong
- General entomology- M.S Mani
  - Insect Pests of Crops- Dr. Pradhan
  - Textbook of Ag. Enomology- H.S Pruthi
  - Handbook of Economic Entomology for South India-Y.R Rao
15. Desert Locust in India is monograph by \_
- Dr. T.N. Ananthakrishnan
  - Dr T.V Ramakrishna Ayyar
  - Y.R. Rao
  - Dr J Anderson
16. Choose the wrong
- Suction Trap- White flies
  - Water traps- BPH
  - Food Lure traps- White Flies
  - Sticky Traps- Aphids
17. Soil Dwelling Insects can be collected by \_\_\_\_
- Berlese funnel
  - Aerial Net
  - Sweep Net
  - All
18. Choose the correct
- Aspirator- collect very small insects.
  - Ccl4 and Chloroform- Killing Insects
  - Pin no - 16 commonly used for pinning larger insects
  - All
19. Choose the wrong regarding pinning region \_\_\_\_
- Earwigs- right tegmen
  - Lace wings- Thorax
  - Stick insects- Pronotum
  - Bugs- Scutellum
20. Choose the correct
- Parental care- Bees
  - Paedogenesis- Gall midge
  - Polyembryony- Aphids
  - both a and b
  - All
21. Reasons for insect dominance \_\_\_\_
- Ability to fly
  - Hexapod locomotion
  - presence of exoskeleton
  - all
22. Choose the wrong
- Legs- 5 segments
  - Thorax- 3 segments
  - Abdomen- 9-10 segments
  - Head 6 segments
23. Choose the correct
- dorsal sclerite- sternum
  - ventral sclerite- pleuron
  - Abdomen- conjunctiva
  - Saddle shape pronotum- cockroach
24. Choose the correct pair \_\_\_\_
- Male genitalia- 10 sternite abdomen
  - Ommatidia- Facets
  - Joint between sclerites- Cranium
  - Valvifers - 3 pairs
25. Choose the odd one out \_\_\_\_
- Aedeagus
  - Valvulae
  - Parameres
  - Male grasshopper

26. Epiproct and paraproct is related to \_\_\_\_
- a) male genitalia
  - b) female genitalia
  - c) insect abdomen
  - d) Insect legs
27. Arthropoda is a \_\_\_\_\_ word \_\_\_\_
- a) Greek
  - b) Latin
  - c) English
  - d) French
28. Which is wrong about Arthropoda \_\_\_\_
- a) Bilateral symmetry
  - b) Striated muscles
  - c) Ciliated epithelium present
  - d) Dorsal Heart
29. Choose the odd one out \_\_\_\_
- a) Prawn
  - b) Crab
  - c) wood louse
  - d) head louse
30. Choose the correct pair \_\_\_\_
- a) millipedes-CHILOPODA
  - b) Velvet worm- Onychophora
  - c) Tick- Crustacea
  - d) Wood louse- Hexapoda
31. Cephalothorax and abdomen with 2 pairs antenna is feature of \_\_\_\_
- a) Spider
  - b) Crab
  - c) Insects
  - d) Scorpion
32. Choose the correct about Chilopoda \_\_\_\_
- a) Herbivores
  - b) 2 pair legs per segment
  - c) Pro genital gonopore
  - d) 1st pair leg modified into poison claw
33. Choose the wrong
- a) Arachnids- no antenna
  - b) Peripatus- connecting link b/w annelida and arthropoda
  - c) Insect- 3 Tagma
  - d) Coxal gland-Crustacea
34. What is not correct about Arachnida \_\_\_\_
- a) 4 pair legs
  - b) Mandibulate mouth parts
  - c) Green glands
  - d) both b and c
35. Choose the wrong about Collembola \_\_\_\_
- a) Spring tails
  - b) 6 segmented abdomen
  - c) Pest of mushrooms
  - d) 11 segmented abdomen
36. Choose the right \_\_\_\_
- a) Protura- Fire brat
  - b) Thysanura- Telson tails
  - c) Archaeognatha- Jumping Bristle tail
  - d) Diplura-Anamorphosis
37. Odd one out \_\_\_\_
- a) Protura
  - b) Collembola
  - c) Zygentoma
  - d) Diplura
38. Which of them possess ectognathous mouth parts \_\_\_\_
- a) Protura
  - b) Diplura
  - c) Fire Brats
  - d) Telson tails

39. Choose the correct about snow fleas \_\_\_\_
- a) Retinaculum - 4 abdominal segment
  - b) Malpighian tubules represented by papillae
  - c) Compound eyes present
  - d) Entognathous biting type mouth parts
40. odd one out \_\_\_\_
- a) Ventral tube
  - b) Furcula
  - c) Collophore
  - d) Glue peg
41. Which is correct about proturans
- a) Eye patch Tibio -Tarsus
  - b) Tibio -Tarsus
  - c) Hyperneustic respiration
  - d) Fore legs sensory in function.
42. What is not correct about telson tails \_\_\_\_
- a) antenna and compound eyes absent
  - b) Anamorphosis and 12 segmented abdomen
  - c) Biting type mouth parts
  - d) Papillae
43. Choose the odd one out \_\_\_\_
- a) Manubrium
  - b) Mucro
  - c) Corpus
  - d) Styli
44. Choose the wrong about Japygids \_\_\_\_
- a) Entognathous monocondylic mouth parts
  - b) Tentorium, Compound eyes and Malpighian tubules absent
  - c) Antennal Flagellar segments provided with muscles
  - d) Tentorium and ocelli present
45. Choose the correct
- a) Sminthuris viridis- Dipluran
  - b) Oligoentoma- Collembola
  - c) Furcula- U shaped
  - d) Protura- Monoliform antennae
46. What is not correct about diplurans \_\_\_\_
- a) Cerci is present at end of abdomen which show autotomy
  - b) Median filament is present
  - c) 11 pair spiracles
  - d) monoliform antenna
47. What is not correct about silver fish \_\_\_\_
- a) Dicondylic
  - b) Humped thorax
  - c) Jumping Bristle tails
  - d) both b and c
48. Choose the odd one out \_\_\_\_
- a) Archaeognatha
  - b) Thysanura
  - c) Diplura
  - d) Protura
49. What is wrong about Archaeognatha \_\_\_\_
- a) Cerci with much longer central filament
  - b) Maxillary palpi is long
  - c) Humped thorax
  - d) Dicondylic
50. Which is not correct about Apterygotes \_\_\_\_
- a) Styli is present
  - b) Metamorphosis absent
  - c) Moulting continues even after adult stage
  - d) Mouth parts are piercing type mostly
51. What is not correct for Silverfish \_\_\_\_
- a) pest in home and libraries
  - b) filiform antenna
  - c) 11 segmented abdomens with styli
  - d) Cerci and ovipositor absent

52. Spermatophores are ejected out in one place by male and females walk over it and get inseminated \_\_\_\_
- a) Bed bug
  - b) Insects
  - c) Silver fish
  - d) All
53. Choose the wrong
- a) Locust warning organization- Jodhpur
  - b) Lac resarch institute- Ranchi
  - c) Indian Museum-Calcutta
  - d) FRI- Kolkata
54. Indian Journal of Entomology is \_\_\_\_ journal
- a) Quarterly
  - b) Biannual
  - c) Yearly
  - d) Biyearly
55. What is not correct about inset body wall
- a) Exoskeleton of insect.
  - b) It consists of inner non cellular layer epidermis and outer cellular layer cuticle.
  - c) Endodermal in origin
  - d) Both b and c
56. Choose the wrong statement \_\_\_\_
- a) Arthropodin- untanned protein
  - b) Arthropodin- water insoluble
  - c) Sclerotin- Tanned protein
  - d) Resilin - Flexibility of wings
57. Choose the correct sequence of layers outside to inside \_\_\_\_
- a) Cement layer- Cuticulin-wax layer- endocuticle-exocuticle-epidermis
  - b) Epidermis-wax layer-cuticulin- endocuticle-exocuticle-cement layer
  - c) Cement layer-wax layer-cuticulin- exocuticle-endocuticle-epidermis
  - d) Basement membrane-Cement layer- wax layer-exocuticle-endocuticle- epidermis
58. Choose the wrong
- a) Thickest layer- endocuticle
  - b) Cuticle- living layer
  - c) Wax layer- Prevents dessication
  - d) Epidermis- Helps in Digestion and absorption of cuticle and cuticle secretion
59. Choose the correct
- a) Apodeme- Solid invagination
  - b) Thorns- uncellular appendages
  - c) Basement membrane provides space for muscle attachment and give shape to body
  - d) Androconia-Honey bee
60. Choose the wrong in context to setae \_\_
- a) Trichogen and Tormogen
  - b) multicellular hair like outgrowth
  - c) Chaetotaxy
  - d) Glandular setae- Caterpillars
61. Immovable multicellular cuticular appendage \_\_\_\_
- a) Spur
  - b) Spine
  - c) Thorns
  - d) Setae
62. \_\_\_\_ setae is present in honey bees
- a) Glandular hairs
  - b) Clothing hairs
  - c) Sensory setae
  - d) Bristles



63. Choose the wrong
- Cement layer- Tectocuticle
  - Shedded skin- Exuvia
  - Molting gel is rich in chitinases and pectinases
  - Dermal glands- Cement layer
64. Choose the correct
- Time interval between 2 subsequent moulting is called instar
  - Detachment of cuticle from epidermis is known as Ecdysis
  - Moulting is controlled by juvenile hormone secreted by Prothoracic gland
  - Phenolic substances aids in tanning.
65. The form assumed by insect in any stadium is called \_\_\_\_
- Imago
  - Pronymph
  - Instar
  - Naiads
66. What is not correct about moulting \_\_\_\_
- Ecdysial line is known as line of weakness
  - Moulting hormone is secreted by Prothoracic gland
  - Apolysis is detachment of cuticle from epidermis
  - Pore canals have no role in deposition of cuticle.
67. What is not correct about head \_\_\_\_
- Formed by fusion of 6 segments.
  - Head capsule excluding appendage is known as cranium.
  - 1st anterior tagma
  - vertex is facial region of head
68. Choose the odd one out \_\_\_\_
- Occiput
  - Clypeus
  - Epistomal suture
  - Frons
69. Lateral cranial area behind the compound eyes and above mandible is known as \_\_\_\_
- occipital foramen
  - gena
  - clypeus
  - Post occiput
70. Choose the wrong about epicranial suture
- not a true suture
  - Y shape
  - found on top of head with coronal and frontal sutures
  - ecdysial line
71. Fronto clypeal suture is known as \_\_\_\_
- Epicranial
  - Epistomal
  - Tentorium
  - Occipital foramen
72. Choose the wrong
- wing bearing segments- Pterothorax
  - Abdomen - 9 to 11 uromeres
  - Genital organ and cerci - cephalic appendage
  - Thoracic spiracles- pleuron
73. Choose the odd one out \_\_\_\_
- Episternum
  - Epimeron
  - Eusternum
  - pleural plate

74. Pterothoracic notum is made up of \_\_\_\_\_
- 3 sutures and 5 tergite
  - 5 sutures and 3 tergite
  - 3 suture and 3 tergite
  - 2 suture and 4 tergite
75. Choose the correct
- Hypognathous - Hemipteroid type
  - Long axis of head is vertical and is at right angle in prognathous head
  - In ground beetle, mouth parts are directed backwards and held in between legs.
  - Prognathous- Coleopteroid type
76. Choose the correct
- In most of insects, flagellum is supplied with intrinsic muscles.
  - Johnston organ is present in scape.
  - Protura have 2 pair of antennae.
  - Antenna is known as feelers
77. Function of antennae is \_\_\_\_\_
- Clasping mate- Fleas
  - Hearing- mosquito
  - Communication- ants
  - All
78. Choose the correct
- Setaceous- Grasshopper
  - Filiform- Bristle like
  - Monoliform-Triangular projections on one side
  - Saw fly- Unipectinate
79. Choose the wrong
- Clavate- clubbed
  - Lamellate- Fan like
  - Stylate- Horse fly
  - Geniculate-scape is long and at an angle
80. Choose the wrong
- Cockroach- Haustellate type mouth parts
  - Plumose- Female mosquito
  - Labrum epipharynx- Organ of taste
  - both a and b
81. Choose the odd one out \_\_\_\_\_
- Cardo
  - Stipes
  - Palpiger
  - Galea
82. Choose the wrong
- Maxillary palp is 5 segmented
  - Mandibles is known as true jaws
  - Mandibles have distal molar teeth and proximal incisor teeth
  - Outer lobe of maxilla is galea and inner lacinia
83. What is not correct about Labium \_\_\_\_\_
- 3 segmented palpiger
  - Ligula
  - Lower lip
  - Secondary jaws
84. What is not correct about mouth parts of bug \_\_\_\_\_
- Both palps are absent.
  - 4 stylets
  - Maxillae forms food and salivary canal
  - Labium is involved in sucking and piercing
85. What is correct about mouth parts of mosquitoes \_\_\_\_\_
- 6 stylets
  - Labrum epipharynx forms food canal and salivary canal
  - Maxillary and labial palp are present
  - both a and c

86. Choose the correct
- Siphoning- House fly
  - Thrips- 3 stylets
  - Spoon shaped glossa to lick nectar- House fly
  - Mandibulosuctorial type – antlion
87. What is not related to sponging type mouth part \_\_\_\_\_
- Labella as suction pads
  - Pseudotracheae as capillary canals
  - Proboscis is formed by galea of maxillae
  - Mandibles absent
88. Choose the wrong
- Proboscis is formed by galea of maxillae in moth
  - Left mandible is absent in thrips
  - Lacerating mouth parts- Thrips
  - Naiads - Mask type mouth parts
89. What is not correct about coleoptera \_\_\_\_\_
- Chewing type mouth parts
  - Fore wings are hard elytra and hind wings membranous
  - Pupae are usually obtect and larva are grubs
  - Largest order and most families in sub order polyphaga
90. What is not correct about ground beetles
- Running legs
  - Caliper like mandibles
  - urogomphi(cerci) is present in grub
  - only adults are predators]
91. Sickle shape mandibles and Larva excavate vertical pits in family \_\_\_\_\_
- Crabidae
  - Lampyridae
  - Dynastidae
  - Anobidae
92. Compound eyes are divided by front margin of head into upper and lower half in
- Dytiscidae
  - Gyrinidae
  - Hydrophilidae
  - Coccinelidae
93. Natatorial legs are present in \_\_\_\_\_
- True water beetles
  - Whirligig beetles
  - Glow worms
  - Both a and b
94. Choose the wrong
- Epilachna- Phytophagous beetle
  - Photogenic organ is present in 6 and 7 abdominal segment in male fire fly
  - Dung beetles- Fossorial legs
  - Anobidae- Grain borers
95. Choose the wrong pair \_\_\_\_\_
- Pronotum helmet like- Cigarette beetle
  - Serrate antenna- Pulse beetle
  - Tenebrionidae- wire worms
  - Tortoise beetle- Cassididae
96. what is correct about weevils \_\_\_\_\_
- Frons and vertex form snout
  - Grub are apodous
  - Geniculate antennae
  - All
97. Choose the odd one out \_\_\_\_\_
- Lesser grain borer]
  - wood worms
  - Flat headed borers
  - meal worms
98. What is not related to Meloidae \_\_\_\_\_
- Cantharidin
  - Hypermetamorphosis
  - Triungulin larva
  - Apodous larva

99. Choose the correct
- All Coccinellids are predator on aphids and soft bodied insects
  - Luminescence is produced with help of luciferin in glow worms
  - Sweet potato weevil-Anobiidae
  - All
100. What is correct about white chaffer beetles
- Scarabeiform larva
  - Leaf like mandibles and horns in adult
  - produce click sound while jump
  - All
101. What is wrong about Ephemeropterans
- Naiad is aquatic with biting mouth parts
  - A pair of cerci and long median filament is present in naiads
  - Imago is not covered with pellicle
  - Adults respire with abdominal gills
102. Choose the wrong
- Ephemeroptera- shade flies/day flies
  - Anisoptera- Damselflies
  - Lacinia and galea form mala- Odonata
  - Wing flexing mechanism absent- Dragonflies
103. Choose the wrong about odonata \_\_\_\_
- Basket legs
  - Pterostigma
  - Functional copulatory organ on 9th abd segment
  - Mask type mouth parts
104. What is correct about dragon flies \_\_\_\_
- Compound eyes are dichoptic
  - Rectal gills in naiads
  - Males has 4 terminal appendages
  - Adults are aquatic predators
105. Type of metamorphosis in Caddisflies \_
- Ametabola
  - Holometabola
  - Paurometabola
  - Hemimetabola
106. What is not correct about Trichopterans \_
- Aquatic larvae with body terminated by hooked caudal appendages
  - Membranous wings
  - Obtect pupae
  - Small moth like insects.
107. Choose the correct statement about adults of Caddisflies \_\_\_\_
- Tarsi 5 segmented
  - Maxillae single lobed with elongated palpi
  - Mandibles vestigial or absent
  - All
108. Choose the wrong pair \_\_\_\_
- Sphingidae- Horn worms
  - Saturnidae- Moon worms
  - Hesperidae - Skipper
  - Pyraustidae - Grass moths
109. What is not correct about member of Hawk Moth Family \_\_\_\_
- Antenna is thick towards middle and hooked at tip.
  - Larva with mid-dorsal horn on 8th abdominal segment.
  - Proboscis is very long and they are strong fliers
  - Markings present on head of the adult Deaths Head Moth resemble human skull

110. Choose the correct pair \_\_\_\_\_
- a) *Acherontia styx*- Pest of turmeric
  - b) *Hesperiidae* -Clubbed antenna with apical hook
  - c) Tussor Silk worm – *Bombycidae*
  - d) Labial palpi snout like – *Geometridae*
111. What is not true about *Saturniidae* moths
- a) *Bipectinate* antennae
  - b) Transparent eye spots present near centre of each wing
  - c) Larva stout and with *scoli*
  - d) Member of this family doesn't yield silk
112. Choose the wrong pair \_\_\_\_\_
- a) *Geometridae*- Loopers
  - b) *Lymantridae*- Tussock moths
  - c) *Noctuidae*- Plume moths
  - d) *Cochilididae* - Slug caterpillars
113. What is not correct about the *Geometridae* family \_\_\_\_\_
- a) Forewings are elongate with 2 or 4 fissures/ cleft
  - b) They are also known as inch worm and earth measurers.
  - c) Only 2 pair of prolegs are present in 6th and 10th segment
  - d) It walks by drawing posterior part of body close to pro thorax
114. Choose the correct pair \_\_\_\_\_
- a) Hind wing of Plume moth- Fringed
  - b) *Noctuidae*- Semi loopers
  - c) *Exelastis atomosa* – *Noctuidae*
  - d) Cut worms larva cause major damage during day time.
115. Choose the correct statement \_\_\_\_\_
- a) *Crambidae*- Larva bores into root, stem or crown of graminaceous plants
  - b) *Gelechiidae*- Paddy moths
  - c) Prolegs of slug caterpillar are rudimentary or absent and body covered with *scopa*
  - d) All
116. Choose wrong pair \_\_\_\_\_
- a) Castor slug caterpillar- *Cochilididae*
  - b) Castor hairy caterpillar- *Lymantridae*
  - c) Sorghum stem borer- *Noctuidae*
  - d) Red gram Plume moth- *Pterophoridae*
117. Choose the odd one out \_\_\_\_\_
- a) *Nymphalidae*
  - b) *Papilionidae*
  - c) *Bombycidae*
  - d) *Satyridae*
118. *Bipectinate* antenna are feature of family
- a) *Lymantridae*
  - b) *Bombycidae*
  - c) *Saturnidae*
  - d) All
119. Choose the wrong statement \_\_\_\_\_
- a) Larva of mulberry silk worm is with dorsal horn on 8 abdominal segment
  - b) *Erebidae*- Tiger moths
  - c) Rice horned caterpillar- *Satyridae*(Meadow browns)
  - d) *Daincha* caterpillar – *Papilionidae*
120. What is not related to Castor Butterfly \_\_\_\_\_
- a) *Nymphalidae*
  - b) Forelegs are short and function less, hence name four footed butterflies.
  - c) *Osmeteria* on prothoracic tergum
  - d) Defoliator pest of castor

121. Choose the wrong statement about Lycaenidae \_\_\_\_
- a) Compound eyes are white rimmed
  - b) Antenna are with white rings
  - c) Commonly called as Swallow tails
  - d) Pomegranate fruit borer is pest belongs to this family
122. Choose the wrong pair \_\_\_\_
- a) Lycaenidae- Blues, Coppers, Hair streaks
  - b) Citrus Butterfly (swallow tail)- Osmeteria on prothoracic tergum
  - c) Nymphalidae- Brush footed butterflies
  - d) Papilionidae- Frenate type wing coupling
123. What is not correct about Lepidopterans
- a) Body with overlapping scales
  - b) Siphoning type mouth parts
  - c) Galea of maxillae modified to form proboscis
  - d) Larva are oligopod
124. What is not correct about lepidopterans \_
- a) 2-5 pair of prolegs present in larva
  - b) 3 pairs compound eyes are visual organs in caterpillar
  - c) Mouth parts are chewing type in caterpillar
  - d) Pupa is generally obtect
125. Most of Lepidopteran insects are grouped under sub order \_\_\_\_
- a) Monotrysia
  - b) Ditrysia
  - c) Both a and b
  - d) None
126. Locust Warning Organization is situated at \_\_\_\_
- a) Jaipur
  - b) Jodhpur
  - c) Banglore
  - d) Karnataka
127. What is not correct about Hymenopterans \_\_\_\_
- a) Mouth Parts are chewing type.
  - b) Labium and maxillae are integrated to form lapping tongue in bees
  - c) Both fore wings and hind wings are coupled by rows of hooklet(hamuli)
  - d) Abdomen beyond pedicel is known as propodeum
128. Choose the correct about hymenopterans \_\_\_\_
- a) Larva is apodous and eucephalous in every hymenopteran
  - b) Pupa is obtect
  - c) Sex is determined by the fertilization of eggs in bees.
  - d) both a and c
129. Choose the odd one out \_\_\_\_
- a) Tenthredinidae
  - b) Apocrita
  - c) Eruciform larva with 6-8 pair prolegs that lack crochets
  - d) *Athalia lugens proxima*
130. Saw like ovipositor with eruciform larva having stemmata is feature of \_\_\_\_
- a) Apocrita
  - b) Symphyta
  - c) Both
  - d) none

131. What is not correct about ichneumonflies?
- Torchanter is 2 segmented
  - Forewing has 2 recurrent vein
  - Petiole is curved and expanded at apex
  - ovipositor is very short
132. Choose the odd one out \_\_\_\_\_
- Eriborus torchanteratus
  - Solitary parasite
  - Ichneumon flies
  - Gregarious parasites
133. What is not correct about Braconid wasps
- Forewing has 1 recurrent vein
  - Gregarious parasites
  - Polyembryony is observed in many species
  - parasitize coleopterans pupa commonly
134. Choose the wrong pair \_\_\_\_\_
- Bethylidae- larval parasites
  - Chalcididae-Brachymeria sp.
  - Eulophidae- larval parasites
  - Trichogrammatidae- egg parasitoids
135. What is not correct about chalcididae \_
- Ovipositor is short and straight
  - hind coxae 5 -6 times larger then fore coxae
  - Brachymeria is pupal parasite of coconut BHC
  - None
136. Choose the correct statement \_\_\_\_\_
- Tetrastichus israeli is gregarious pupal parasite of coconut BHC
  - Trichogramma is used in biological control of sugarcane moth borers
  - Gaster is short and carried like flag in Evaniidae
  - All
137. What is not correct about Blastophaga pesenes \_\_\_\_\_
- winged male and apterous females
  - Family Aganidae
  - Pollinates symyrna fig
  - None
138. Choose the correct pair \_\_\_\_\_
- Vespidae- Ants
  - Sphecidae- Digger wasp
  - Formicidae- Thread waisted wasp
  - Megachilidae- Honey bees
139. What is correct about yellow jackets/hornets of vespidae \_\_\_\_\_
- Lateral extensions of pronotum forms rounded lobes
  - They construct the nest with wasp paper(chewed wood and saliva)
  - Vespa cincta is lac insect enemy
  - They are adult parasitoids
140. Choose the wrong one out \_\_\_\_\_
- Ants- Genuiculate antenna
  - Honey bees- Scopa
  - Megachile sp- pest of rose only
  - Leaf cutter bee- circular or crescent shaped pieces of leaves
141. What is not correct about carpenter bees
- Adults are not aggressive and they do not sting
  - Pollen baskets are present in hind legs
  - They take nectar by simply biting through base of flower instead of sipping from top
  - Dorsum of abdomen is bare

142. What is not correct about Thysanopterans \_\_\_\_
- a) Rasping and sucking type mouth parts
  - b) Mouth cone is formed by labrum and labium together with maxillae
  - c) Assymetrical type mouth parts as left mandible is absent
  - d) 3 stylets are present
143. What is correct about Thrips \_\_\_\_
- a) Fringed wings
  - b) Weak fliers and passive flight in wind is common
  - c) Nymphal stage is followed by prepupal and pupal stages
  - d) Ovipositor is absent in sub order Tubulifera
  - e) All
144. Choose the odd one out \_\_\_\_
- a) Stenchaetothrips biformis
  - b) Thripidae
  - c) Wheat
  - d) Lacerating type mouth parts
145. What is not correct about orthopterans \_
- a) Filiform antenna
  - b) Mouth parts are mandibulate
  - c) Saltatorial hind legs
  - d) Forewings are membranous with large anal area
146. Choose the wrong statement about orthopterans \_\_\_\_
- a) Metamorphosis is gradual
  - b) 1st instar nymphs are known as Pronymphs
  - c) Wing pads undergo reversal during development
  - d) Ovipositor and cerci not well developed
147. Choose the odd one out \_\_\_\_
- a) Acrididae
  - b) Tettigonidae
  - c) Gryllidae
  - d) Gryllotalpidae
148. Morphological Polymorphism is seen in insect \_\_\_\_
- a) Locust
  - b) Crickets
  - c) Grasshopper
  - d) All
149. What is not correct about Ensifera \_\_\_\_
- a) Antenna is long with more than 30 segments
  - b) Tympanum is found on foretibia
  - c) Feed on monocot plants
  - d) Eggs are singly inserted
150. Choose the correct pair \_\_\_\_
- a) Femora alary mechanism-peg rubbed against radial vein
  - b) Alary type- Peg rubbed with radial vein
  - c) Short horned grasshopper-alary type
  - d) sword like ovipositor in mole crickets
151. Choose the odd one out \_\_\_\_
- a) Special stirdulatory structures absent
  - b) ovipositor vestigial
  - c) Fossorial fore legs
  - d) Gryllidae
152. Needle like ovipositor is present in \_\_\_\_
- a) Acrididae
  - b) Tettigonidae
  - c) Gryllotalpidae
  - d) Gryllidae



153. Choose the correct statement \_\_\_\_\_

- a) Anterior part of dorsal vessel is called heart
- b) Ostia permits two way flow of haemolymph into dorsal vessel
- c) Contraction of alary muscles affect heart beat
- d) The dorsal vessel lies in pericardial sinus

154. ventral nerve cord is related to \_\_\_\_\_

- a) dorsal diaphragm
- b) ventral diaphragm
- c) perivisceral sinus
- d) pericardial sinus

155. Accessory pulsatile organs are present in \_\_\_\_\_

- a) Base of antenna
- b) Base of legs
- c) Both
- d) None

156. What is not correct about plasma \_\_\_\_\_

- a) PH is usually 6.7 and density is 1.01 to 1.06
- b) Water content is 84-92%
- c) Glycerol is present as antifreezing compound in plasma in high altitude insects
- d) Major carbohydrate present in plasma is glucose

157. Choose the wrong pair \_\_\_\_\_

- a) Prohaemocyte -Smallest
- b) Cytocyte- role in coagulation
- c) Adipohaemocytes-aids in phagocytosis
- d) Haemolymph is generally colourless except chironomid larva

158. Which is not function of haemolymph \_\_\_\_\_

- a) Reflex bleeding in aphids
- b) Thermoregulation
- c) Transport of Oxygen
- d) Eversion of osmeteria

159. Choose the wrong statement \_\_\_\_\_

- a) No true insect has more than 10 pairs of spiracles
- b) Gas exchange in insect occur by means of trachea
- c) Air usually enters trachea via spiracular openings
- d) Finest branches of trachea is known as taenidia

160. Choose the correct pair \_\_\_\_\_

- a) Metapneustic-puparium
- b) propneustic-head louse
- c) Amphipneustic-maggot
- d) Hemipneustic-Naiads

161. Choose the wrong

- a) Spiracle- Peritreme
- b) Tracheoles- Taenidia absent
- c) Tracheal trunks-3
- d) Airsacs- Collapsible sac like dilations

162. Choose the odd one out \_\_\_\_\_

- a) Spiracles
- b) Atrium
- c) Peritreme
- d) Tracheoblast

163. Choose the correct pair \_\_\_\_\_

- a) Respiratory siphon- wriggler
- b) Plastron- Water scorpion
- c) Rectal gills-Mayfly naiad
- d) Air store- Dragonfly

164. Choose the odd one out \_\_\_\_\_
- a) Gills
  - b) Plastron
  - c) Air store
  - d) Caudal breathing tube
165. Insect excretory waste is \_\_\_\_\_ in nature \_\_\_\_\_
- a) Liquid
  - b) Gases
  - c) Solid
  - d) All
166. Choose the odd one out \_\_\_\_\_
- a) Thin blind ending tubules
  - b) junction of mid gut and hind gut
  - c) Marcello malphigi
  - d) Nephrocytes
167. Odd no of malphigian tubules are present in \_\_\_\_\_
- a) Scale insects
  - b) Locust
  - c) Bugs
  - d) Mosquitoes
168. Malphigian tubules are absent in \_\_\_\_\_
- a) Spring tails
  - b) Aphids
  - c) Cockroach
  - d) Both a and b
169. Cells that specifically help in excretion in naiads \_\_\_\_\_
- a) Chloride cells
  - b) Oenocytes
  - c) Fat bodies
  - d) All
170. Choose the odd \_\_\_\_\_
- a) Cryptonephry
  - b) Larval coleoptera
  - c) Larval lepidoptera
  - d) Larval symphyta
171. Which is not function of Malphigian tubules \_\_\_\_\_
- a) Silk production in Neuroptera
  - b) Spittle secretion in spittle bug
  - c) Homeostasis
  - d) Storage excretion
172. Choose the odd \_\_\_\_\_
- a) Meconium
  - b) White colour of body wall of red cotton bug
  - c) Urates
  - d) Oenocytes
173. 2 segmented torchanter is present in \_\_\_\_\_
- a) Dragonfly
  - b) Damselfly
  - c) Ichneumon flies
  - d) All
174. Choose the wrong
- a) Leg-5 segments
  - b) Arolium-1 in each leg
  - c) Pulvulli-1 pair at each leg
  - d) Tibia-largest leg segment
175. Choose the wrong pair \_\_\_\_\_
- a) Fossorial-Tibia with tines
  - b) Scansorial- Tibia is stout and at one side with thumb like process
  - c) Raptorial- prehensile forelegs of preying mantis
  - d) Claspig legs- Hind legs of water beetle

176. Choose the odd one out \_\_\_\_\_
- a) Antennal cleaner
  - b) Pollen Basket
  - c) Pollen packer
  - d) Pollen comb
177. Choose the wrong pair \_\_\_\_\_
- a) Pterostigma-Dragonfly
  - b) Wing-Double layer
  - c) Area containing Pteralia-Jugum
  - d) Anterior area of wing- Remegium
178. Choose the wrong pair \_\_\_\_\_
- a) Haltere- Hicks papillae
  - b) Fringed wings- Thrips
  - c) Male frenate-Hepialid moths
  - d) Female frenate- Retinaculum near cubitus
179. Choose the correct pair \_\_\_\_\_
- a) Hamulate- Bees
  - b) Frenate- Fruit sucking moth
  - c) Hind wings of ear wigs- Membranous
  - d) All
180. Choose the wrong
- a) Short and many segmented cerci- Mayfly
  - b) Assymetrical cerci- Male embid
  - c) Dolichasters-Antlion grub
  - d) Physogastry- Termites
181. Choose the right \_\_\_\_\_
- a) Median caudal filament- silver fish
  - b) Furcula- inverted Y shaped organ
  - c) Pseudoovipositor-Fruit flies
  - d) Both a and d
182. Choose the correct
- a) Teeth like Gizzard-cockroach
  - b) Gizzard- Muscled
  - c) Peritrophic membrane- Mid gut
  - d) All
183. Choose the wrong
- a) Hepatic caeca-increase area of mid gut
  - b) Midgut-Mesodermal
  - c) Jassidssaliva-Toxin
  - d) Gall midges -IAA
184. Choose the odd one out \_\_\_\_\_
- a) Trophollaxis
  - b) Amylase
  - c) Invertase
  - d) Lipase
185. Choose the wrong match \_\_\_\_\_
- a) Body of neuron= Neurocyte
  - b) Mass of axon= Neuropile
  - c) Basic component of nervous system=Nerve cell
  - d) Neuron with a proximal axon and long dendrite=Monopolar
186. Neuron that conduct impulses from CNS to effector organ
- a) Sensory Neuron
  - b) Motor Neuron
  - c) Inter Neuron
  - d) Assosiation Neuron
187. Choose the odd one out \_\_\_\_\_
- a) Acetylcholine
  - b) Dopamine
  - c) Catecholamines
  - d) Synapse
188. Ganglia are connected by longitudinal tracts of nerve fibres called \_\_\_and transverse tracts of nerve fibres called\_\_\_\_respectively.
- a) Connectives, Commissures
  - b) Commisures, Connectives
  - c) Commmisures, Commmisures
  - d) Connectives, Connectives

189. Choose the wrong statement \_\_\_\_
- a) Impulse conduction occurs in form of electrical response in axonic conduction.
  - b) Neurotransmitters are involved in synaptic conduction
  - c) Acetyl choline esterases play important role in axonic conduction
  - d) Neurotransmitter are involved in impulse conduction through synaptic gap.
190. Choose the wrong statement \_\_\_\_
- a) Brain is fusion 3 cephalic neuromeres
  - b) Tritocerebrum innervates labrum
  - c) Protocerebrum innervates antennae
  - d) Sub oesophageal ganglia innervates mandible, maxillae and labium
191. What is not correct about thoracic ganglia
- a) 3 pairs
  - b) largest ganglia
  - c) innervates legs
  - d) Innervates spiracles
192. Choose the wrong pair \_\_\_\_
- a) Abdominal ganglia- Spiracles
  - b) Stomodaeal nervous system- abdomen posterior segments
  - c) Ventral Visceral - Ventral nerve cord
  - d) Monopolar- neuron with single axon
193. Choose the wrong pair \_\_\_\_
- a) Head- 2 pair Ganglionic centre
  - b) Thorax- 3 pair ganglia
  - c) Head- 3 pairs ganglia
  - d) Abdomen- max 8 pairs ganglia
194. Choose the odd one out \_\_\_\_
- a) Sub Oesophageal ganglion
  - b) Stomodaeal system
  - c) Caudal visceral system
  - d) Ventral visceral system
195. Choose the wrong pair \_\_\_\_
- a) Mechanoreceptors- Pressure
  - b) Auditory receptors- Light
  - c) Chemoreceptors - Chemicals
  - d) Thermoreceptors- Heat
196. Choose the wrong
- a) Trichoid sensilla- Hair like
  - b) Chorodental organ- Scolopale cell
  - c) Johnston organ- Auditory receptor
  - d) Campaniform sensilla- Dome sensilla
197. Choose the correct statement \_\_\_\_
- a) Uniporous chemoreceptors mostly detect chemicals in vapour form
  - b) Multiporous chemical receptors are called as gustatory receptors
  - c) Uniporous receptors mostly detect chemicals by contact form
  - d) Multiporous receptors mostly detect chemical of solid and liquid form
198. Choose the wrong pair \_\_\_\_
- a) Lateral Ocelli- Larva of holometabolous
  - b) Superposition type-Primary pigment cells are present
  - c) Dorsal ocelli- Nymph
  - d) Ommatidia- Hexagonal Facet
199. Choose the odd one out \_\_\_\_
- a) Corneal lens
  - b) Corneagenous cells
  - c) Rhodopsin
  - d) Primary Pigment cell

200. What is not correct related to sensory part of ommitadia \_\_\_\_\_
- a) 6-10 retinular cells
  - b) Light sensitive rod- Rhabdom
  - c) Primary Pigment cell- cover retinular cell
  - d) Rhodopsin- Light sensitive pigment
201. Which is not part of female reproductive system \_\_\_\_\_
- a) Bursa Copulatrix
  - b) Spermatheca
  - c) Seminal vesicle
  - d) Calyx
202. Spermatheca is \_\_\_\_\_ in origin \_\_\_\_\_
- a) Endodermal
  - b) Ectodermal
  - c) Mesodermal
  - d) ecto-endodermal
203. Choose the correct pair \_\_\_\_\_
- a) Hermaphrodite-Cotton cushiony scale
  - b) Female accessory glands- Ectodermal origin
  - c) Vitellarium- Vitellogenesis
  - d) All
204. Choose the wrong statement \_\_\_\_\_
- a) Panoistic ovariole- Cockroach
  - b) Youngest oocyte occurs near the apical germarium
  - c) Trophocytes confined to germarium- Polytrophic ovariole
  - d) Acrotrophic ovariole- Bugs
205. How many mitosis and meiotic divisions occurs in formation of sperm \_\_\_\_\_
- a) 2,1
  - b) 1,2
  - c) 2,2
  - d) 1,1
206. Choose the wrong
- a) Spermatogenesis- inside Sperm tube
  - b) Oogenesis- inside egg tube
  - c) Male Accessory glands- Collateral glands
  - d) Spermatophores- male accessory glands
207. Haemocoelous insemination occurs in \_
- a) Mosquito
  - b) Moths
  - c) Bed Bug
  - d) Silver Fish
208. Choose the odd one out \_\_\_\_\_
- a) Corpora allata
  - b) Osmeteria
  - c) Corpora cardiaca
  - d) Prothoracic glands
209. Bee milk is secreted by which gland \_\_\_\_\_
- a) Mandibular glands
  - b) Pharyngeal glands
  - c) Setal Glands
  - d) Maxillary glands
210. Choose the wrong pair \_\_\_\_\_
- a) Andraconia- Scented scales
  - b) Osmeteria- Forked glands
  - c) Stink Glands- Repugnatorial glands
  - d) Mandibular glands- royal jelly
211. Osmeteria are present in \_\_\_ of papilionid larva \_\_\_\_\_
- a) Head
  - b) Thorax
  - c) Abdomen
  - d) All
212. Moulting fluid is secreted by \_\_\_\_\_
- a) prothoracic glands
  - b) Moulting glands
  - c) milk glands
  - d) Corpora cardiaca

213. Which one of following is modified accessory glands \_\_\_\_
- Wax glands, Lac glands
  - wax glands, sting glanda
  - lac glands, milk glands
  - Milk glands, sting glands
214. Heart beat and Trehalose level is controlled by \_\_\_\_
- Corpora cardiaca
  - Corpora allata
  - Neurosecretory cells
  - Moulting gland
215. Choose the wrong pair \_\_\_\_
- weismann ring- puparium hardening hormone
  - Corpora allata- Juvenile hormone
  - Prothoracic glands-present near metathorax
  - Precocene- Anti JH
216. Choose the correct statement \_\_\_\_
- Exocrine glands- Without duct
  - Endocrine glands- with duct
  - Milk glands- Sheep ked
  - Lac glands- Endocrine
217. What is not correct about pseudoplacental viviparity \_\_\_\_
- egg develops in genital tract
  - Found in aphids, psocoids
  - mother provides placenta like tissue
  - Eggs are laid upon hatching and there is oral feeding
218. Hatching of eggs occur just prior to or soon after oviposition in \_\_\_\_
- Oviparity
  - Ovoviviparity
  - Parthenogenesis
  - Adenotrophic viviparity
219. Choose the wrong statement \_\_\_\_
- larva feeds orally from milk gland within uterus in adenotrophic viviparity
  - In strepsiopterans haemocoelous viviparity occurs
  - Moths- Ovoviviparity
  - Tse tse flies-adenotrophic
220. Arrhenotoky occurs in \_\_\_\_
- Bees
  - Aphids
  - both a and b
  - cynipid wasps
221. Choose the correct pair \_\_\_\_
- Larval paedogenesis-Blister beetle
  - Thelytoky- only male produced
  - Cyclic parthenogenesis- Bee
  - Polyembryony- Trophamnion
222. Parthenogenesis reproduction by Immature insects is known as \_\_\_\_
- Paedogenesis
  - Polyembryony
  - Parthenogenesis
  - All
223. what is not related to polyembryony \_\_\_\_
- Parasitic insects like gall midge
  - Trophamnion
  - Form of sexual reproduction
  - 2 or more embryos from 1 egg
224. Larval Paedogenesis occurs in \_\_\_\_
- Blister beetle
  - Gall midges
  - BEE
  - Aphids

225. Choose the correct statement \_\_\_\_\_

- a) Silver fish have only three stages in their life cycle i.e. egg, nymphs and adult
- b) Hemimetamorphosis is most primitive type of metamorphosis
- c) In Ametabola moulting continues throughout life
- d) In silver fish juveniles differ from adults except size

226. Choose the wrong statement \_\_\_\_\_

- a) In may fly the young ones are aquatic and known as naiads
- b) In dragon fly naiad the labrum is called mask provided with hooks for capturing prey
- c) Hemimetabola insects have 3 life stages in their life cycle
- d) Naiads are different from adult in both habit and habitat

227. Choose the wrong statement about cockroaches \_\_\_\_\_

- a) Young ones are called as nymphs
- b) Both adults and nymphs are similar in habitat
- c) Compound eyes and mouth parts of nymphs and adults are not similar
- d) Nymphs resemble adult in general body form except wings and external genitalia

228. Choose the odd one out in relation to metamorphosis \_\_\_\_\_

- a) Butterfly
- b) Moth
- c) Bees
- d) Bugs

229. Choose the correct statement \_\_\_\_\_

- a) In Holometabola larva differs greatly from adult and wing development is external
- b) Outer protective shell of egg is called chorion
- c) Micropyle is present at posterior end of the egg
- d) All

230. Choose the wrong pair \_\_\_\_\_

- a) Sculptured eggs- Castor Butterfly
- b) Cigar shaped eggs- Singly laid eggs
- c) Nit- Egg stigma
- d) Egg with float- Culex mosquito

231. Choose the correct pair \_\_\_\_\_

- a) Pedicellate eggs- Green lace wing Fly
- b) Barrel shaped eggs-Stink Bug
- c) Egg raft-Culex mosquitoes
- d) All

232. Choose the wrong statement \_\_\_\_\_

- a) Each ootheca consists of double layered wrapper protecting 2 parallel rows of eggs
- b) Mantids deposit their eggs in foamy secretion called spumaline
- c) Moth lays eggs singly in its body hairs.
- d) Egg raft consist of mass of 200-300 eggs.

233. What is not correct about Campodeiform larva \_\_\_\_\_

- a) Body is elongate, depressed dorsoventrally and well sclerotised
- b) Head is prognathous
- c) Thoracic legs are short
- d) Found in Grub of antlions

234. Choose the wrong pair \_\_\_\_\_
- a) Scarabaeiform- C shape body
  - b) Scoli- Slug caterpillar
  - c) Loopers- Only 2 pair prolegs are absent
  - d) Caterpillars- Eruciform Larva
235. Apodous larva are further divided into euhemi and acephalous on degree of development and sclerotization of \_\_\_\_\_
- a) Legs
  - b) Head capsule
  - c) Antenna
  - d) Mandibles
236. Type of larva of red Palm Weevil \_\_\_\_\_
- a) Eucephalous
  - b) Hemiccephalous
  - c) Acephalous
  - d) Campodeiform
237. Choose the wrong pair \_\_\_\_\_
- a) Acephalous- Maggot
  - b) Hemiccephalous- Robber fly
  - c) Eucephalous- Wriggler
  - d) Vermiform larva- Horse fly larva
238. What is not correct about Chrysalis \_\_\_\_\_
- a) obtect type
  - b) Abdominal Hook- Cremaster
  - c) 2 Silken threads- Gridle
  - d) larva of butterfly
239. Which is not correct to tumbler \_\_\_\_\_
- a) Mosquito pupa
  - b) Anal paddles
  - c) Breathing trumpets
  - d) Inactive stage
240. Choose the wrong pair \_\_\_\_\_
- a) Appendages are not glued to body- EXARATE PUPA
  - b) Coarctate- Puparium
  - c) Rhinoceros beetle- Obtect pupa
  - d) Coconut Black Headed Caterpillar- Frassy cocoon
241. Termites are favoured in \_\_\_\_\_
- a) Sandy soil
  - b) Red soil
  - c) Black soil
  - d) waterlogged soil
242. Which of following is method of prevention of desiccation in insects \_\_\_\_\_
- a) Spiracle closing mechanism
  - b) Rectal resorption of water
  - c) Water insoluble Uric acid
  - d) All
243. Choose the correct pair \_\_\_\_\_
- a) Insects- Mostly endothermic
  - b) Ballooning- Monarch Butterfly
  - c) Migratory flights- Trivial Flights
  - d) Mealy bug nymphs transported by black ants- Phoresy
244. Choose the wrong pair \_\_\_\_\_
- a) Rheotaxis- Stimuli is Water current
  - b) Heliotaxis- Stimuli is air current
  - c) Thigmotaxis- Stimuli is touch
  - d) Thermotaxis- Stimuli is Temperature
245. What is not correct in relation to position of scent glands \_\_\_\_\_
- a) Female Lepidoptera-Eversible sacs on 10 and 11 segment
  - b) Female Honey Bees- Mandibular glands
  - c) Female cockroach- Midgut
  - d) Female Aphids- Hind tibia



246. Choose the correct pair \_\_\_\_\_
- a) Danaidone- Sex pheromone
  - b) Spacing pheromone- Scolytid beetles
  - c) Waggle Dance- Nearby food communicate
  - d) Variation in pH controls rate of flashing in Fire fly
247. Which is not feature of orders in Orthopteroid group \_\_\_\_\_
- a) Mandibulate mouth parts
  - b) Anal area of hind wing is well developed
  - c) Many no of malphigian tubules
  - d) Abdomen is not with cerci
248. Fleas are included in order \_\_\_\_\_
- a) Psocoptera
  - b) Mallophaga
  - c) Siphonculata
  - d) Siphonaptera
249. Same name is used for describing 2 different types of insects \_\_\_\_\_
- a) Synonym
  - b) Homonym
  - c) Toponym
  - d) All
250. Choose the wrong
- a) Alpha taxonomy- Naming
  - b) Beta taxonomy- Phylogeny
  - c) Linnaeus- Father of Taxonomy
  - d) Species- Obligate category
251. Choose the wrong pair \_\_\_\_\_
- a) Thanatosis- Beetles
  - b) Threatening pose- Stag beetle
  - c) Spittle bugs secretion- Protective Constructions
  - d) Sclerotised cerci- Mantids
252. Which one of following is correct \_\_\_\_\_
- a) Osmeteria-Exogenous type secretion
  - b) Stink glands-Prothorax of stink bugs
  - c) Homomorphism- Cow bug
  - d) Homotypism-Preying mantids
253. Both model and mimic are unpalatable and ingestion of any of them by predator result in avoidance of both of them \_\_\_\_\_
- a) Batesian Mimicry
  - b) Mullerian mimicry
  - c) Cryptism
  - d) All
254. Choose the wrong about Phasmida \_\_\_\_\_
- a) Body is Stick like or Leaf like
  - b) Head is Hypognathous
  - c) Metathorax and mesothorax are long
  - d) Mouth parts are chewing type
255. What is not correct statement \_\_\_\_\_
- a) Tibia and femur shows lamellate expansion in Leaf Insect
  - b) A line of weakness is found btwn torchanter and rest of leg
  - c) Cerci are long and segmented in phasmids
  - d) Phasmids are Herbivorous
256. Choose the correct statement about Dermaptera \_\_\_\_\_
- a) Forewings are short, leathery and veinless
  - b) head with distinct Y shaped epicranial suture
  - c) Hindwings are large semicircular, ear like
  - d) All

257. What is wrong about Ear wigs \_\_\_\_\_
- a) Cerci is unsegmented and forceps like
  - b) Anal area of hind wing is large and fold fan like
  - c) Cerci is large and bowed in female and straight in males
  - d) Parental care is shown by Female ear wigs
258. What is not correct about Embiopterans
- a) Male is apterous and female is winged
  - b) Silk glands are present on the Basitarsus
  - c) Antenna filiform and mouth parts chewing
  - d) Live inside silken tunnels and feed on decaying matter
259. Choose the wrong about web spinners \_\_\_\_\_
- a) Radial vein is thick
  - b) Embiids are gregarious
  - c) Cerci are equal and two segmented in males and assymetrical in females
  - d) Females show parental care
260. What is not true about Hemipterans \_\_\_\_\_
- a) Ophisthognathous head
  - b) Sucking and piercing mouth parts
  - c) 3 pair stylets
  - d) Mesothorax represented dorsally by scutellum
261. Which is not correct about Hemipterans
- a) Cerci present
  - b) Holometabolous
  - c) extra oral digestion and filter chamber present
  - d) both a and b
262. Honey dew secretion is common, Filter chamber is well developed in \_\_\_\_\_
- a) Heteroptera
  - b) Homoptera
  - c) A and B both
  - d) None
263. Choose the wrong pair \_\_\_\_\_
- a) Gerridae- Jesus bugs
  - b) Reduviidae- Cone nose bugs
  - c) Cimicidae- Bed bugs
  - d) Miridae- Lace wing bugs
264. What is not correct about Bed bugs \_\_\_\_\_
- a) Oval body
  - b) Stink glands on 1st 3 abdominal segments
  - c) Traumatic insemination
  - d) Blood sucking endoparasites
265. Choose the correct statement \_\_\_\_\_
- a) Pronotum has lateral expansions with lace like sculpturing in family Tingidae
  - b) Leaf bugs belong to Miridae
  - c) Seed bugs- Lygaeidae
  - d) All
266. Dusky cotton bug belongs to family \_\_\_\_\_
- a) Lygaeidae
  - b) Anthocoridae
  - c) Pyrrhocoridae
  - d) Pentatomidae
267. Choose the wrong statement \_\_\_\_\_
- a) Stink glands are present on abdomen of nymph of stink bug
  - b) Fore legs are raptorial in Nepidae
  - c) Embolium is feature of Flower bugs
  - d) Giant water bugs belongs to Nepidae

268. According to old classification cockroaches are included in suborder \_\_\_\_
- Blattaria
  - Dictyoptera
  - Blattodea
  - Blaatidae
269. Choose the wrong statement about Blattodea \_\_\_\_
- Hypognathous head
  - Cerci short and many segmented
  - Monocondylic
  - Fore wings tegmina and Hind wings membranous
270. Choose the wrong pair \_\_\_\_
- Termites- Moniliform antenna
  - cockroach- Saw like antenna
  - Mantids fore leg- Raptorial
  - Blattodea- Tarsus 5 segmented
271. What is not correct about Cockroaches \_\_
- Shield like pronotum
  - 2 Fenestrae
  - Gizzard with no chitinous teeth
  - Cursorial legs
272. Cockroaches are \_\_\_\_
- Omnivorous
  - Carnivorous
  - Herbivorous
  - Saprophagous
273. Generally No of eggs present in each row in ootheca of cockroach \_\_\_\_
- 4 pairs
  - 8 pairs
  - 20 pairs
  - 16 pairs
274. What is correct about Mantids \_\_\_\_
- Middle legs suited for capturing prey
  - Head is not mobile in all directions
  - Nymphs are cannibalistic
  - Gizzard with chitinous teeth
275. Mantids are \_\_\_\_\_ in nature \_\_\_\_
- Omnivorous
  - Carnivorous
  - Herbivorous
  - Scavengers
276. Choose the correct pair \_\_\_\_
- Cockroach- Spumaline
  - Mantodea- Parasitoids
  - Mantis - Mimics leaf and flower
  - Degenerated compound eye- Fenestrae
277. Choose the odd one out \_\_\_\_
- Cicadidae
  - Miridae
  - Cicadellidae
  - Delphacidae
278. What is not correct about cicadas \_\_\_\_
- Tympanum is present in both sexes
  - Anterior femur of nymph is suited for digging the soil
  - Tymbal is present in both sexes
  - Life cycle of periodical cicada lasts for 13 to 17 years
279. Female Cicadas lay their eggs in \_\_\_\_
- Soil
  - tree twigs
  - near plant roots
  - leaves

280. Sound producing Drum like organ is present in makes at\_\_\_\_
- Head
  - Thorax
  - Abdomen
  - Tibia
281. What is not correct about Tree hoppers \_
- Members of Membracidae
  - Structurally modified to resemble thorns
  - Pronotum is large and covers the head
  - Pronotal processes is completely developed in nymphs
282. Tungro disease of Rice is transmitted by member of family \_\_\_\_\_
- Lophopidae
  - Delphacidae
  - Cicadidae
  - Cicadellidae
283. What is correct about Leaf hoppers \_\_\_\_\_
- oval shaped insect
  - Hind tibia with double row of spines
  - Ovipositor vestigial
  - Nymphs are chewing in food nature
284. Role of Spittle in Spittle bug \_\_\_\_\_
- Protection
  - Reproduction
  - Means of reducing evaporation
  - both a and c
285. What is not correct about Frog hoppers \_
- Family Cercopidae
  - Epidermal glands on 7 and 8 segment helps in froth secretion
  - Nymphs are soft whitish and live inside froth
  - Head is produced into snout
286. Large mobile flattened spur is present at apex of hind tibia in \_\_\_\_\_
- Lophopidae
  - Delphacidae
  - Cicadellidae
  - Psyllidae
287. Choose the odd one out \_\_\_\_\_
- Lophopidae
  - Aeroplane bugs
  - Sugarcane scale
  - Sugarcane leaf hopper
288. Jumping plant lice belongs to Family \_\_\_\_\_
- Aleyrodidae
  - Psyllidae
  - Coccidae
  - Diaspididae
289. What is not correct about Aleyrodidae members \_\_\_\_\_
- Wings dusted with white powdery wax
  - Vasiform orifice in last abdominal tergite and lingula present
  - presence of Quiescent stage prior to adults
  - Transmits Mycoplasmal diseases mainly
290. Greenflies are members of which family \_
- Aphididae
  - Coccidae
  - Kerridae
  - Diaspididae

291. Choose the wrong statement about Scale insects \_\_\_\_\_

- a) Hind wings reduced to halteres in male
- b) Sexual dimorphism present
- c) Females are wingless, legless and covered with waxy coating
- d) 1st instar nymph is known as crawlers and is legless

292. Choose the odd one out \_\_\_\_\_

- a) Coconut scale
- b) *Aspidiotus destructor*
- c) Coccidae
- d) Diaspididae

293. Choose the correct statement \_\_\_\_\_

- a) Females are globular with well developed legs and wings in Kerridae
- b) Body is covered in long radiating threads in mealy bugs
- c) Body enclosed in thick resinous cell in scale insect
- d) All

294. Choose the odd one out \_\_\_\_\_

- a) Greenflies
- b) Mosquitoes
- c) Gnats
- d) Midges

295. What is not correct about Dipterans \_\_\_\_\_

- a) Complete metamorphosis
- b) Halteres work as equilibrium organ
- c) Single pair of wings
- d) Larvae is oligopod type

296. Choose the wrong pair \_\_\_\_\_

- a) Puparium- Coarctate
- b) Maggot- larva
- c) Diptera- True flies
- d) Nematocera- Circular crack

297. What is not correct about sub order Nematocera \_\_\_\_\_

- a) Pupa is weekly obtect
- b) Antenna is long and many segmented
- c) Larval mandible act vertically
- d) Adult emerge through straight split in thoracic region

298. Choose the wrong pair \_\_\_\_\_

- a) Brachycerans- Exarate pupa
- b) Ptilinum- Head
- c) Cyclorrhapa- Coarctate
- d) Brachycera- Thread horn

299. Which families don't come under sub order Nematocera \_\_\_\_\_

- a) Culicidae
- b) Cecidomyiidae
- c) Asilidae
- d) Both a and B

300. What is not correct about Mosquitoes \_\_\_\_

- a) Larva called as wrigglers
- b) 6 stylets
- c) Male are blood feeders
- d) Plumose antennae in male

301. What is not correct about Culicidae \_\_\_\_\_

- a) Pupa are active tumblers
- b) Pair of prothoracic horns and paddles in mosquito larva
- c) Chewing type mouth parts in Wiggler
- d) *Culex* transmits Filariasis

302. Choose the odd one out \_\_\_\_\_

- a) Respiratory siphon
- b) Anal paddles
- c) Wrigglers
- d) Anal gills

303. What is not correct about chest bone \_\_\_\_
- Related to larva of gall midges
  - Related to adults of gall midges
  - Structure related to prothorax
  - Sclerotised area
304. Choose the wrong statement about Robber flies \_\_\_\_
- Selective predators
  - Protuberant eyes
  - Tuft of hairs of head form mouth beard
  - Horny ovipositor in female and claspers in male at abdomen end
305. Choose the wrong about Horse flies \_\_\_\_
- Holoptic eyes in female
  - Male feeds on nectar
  - Third antennal segment is annulated
  - They spread anthrax
306. Family of Horse flies \_\_\_\_
- Asilidae
  - Tabanidae
  - Culicidae
  - Cecidomyiidae
307. Spurious vein of Syrphids are present between \_\_and \_\_in fore wing \_\_\_\_
- Radius and costa
  - Radius and median
  - Median and cubitus
  - Costa and sub costa
308. Maggots are predators and adults are pollinators in family \_\_\_\_
- Syrphidae
  - Asilidae
  - Muscidae
  - Drosophilidae
309. Choose the wrong statement about *Drosophila* \_\_\_\_
- Eyes are usually red
  - Larva feeds on yeast and fermentation products
  - Life cycle is very long
  - Used in study of genetics
310. Choose the odd one out \_\_\_\_
- Vinegar gnats
  - Tephritidae
  - Dorsophilidae
  - Pomace flies
311. Choose the odd one out \_\_\_\_
- Leaf miner
  - Pod flies
  - Fruit fly
  - Stem fly
312. Choose the wrong pair \_\_\_\_
- House fly- Aristate antenna
  - Agromyzidae- Leaf miners
  - Tephritidae- Fruit flies
  - Tachinidae flies- Ectoparasites of larva and pupa
313. What is not correct about Muscidae \_\_\_\_
- Sponging type mouth parts
  - Labrum modified into Labella
  - Maggots are scavengers
  - Presence of Pseudo ovipositors
314. What is not correct about Dog flies \_\_\_\_
- Blood sucking ectoparasites
  - Viviparous
  - Hippobosca capensis* is parasitic on cattles
  - Young larva retained in uterus and feed by special nutritive gland

315. What is not correct about trophallaxis \_\_\_\_

- a) Mutual exchange of alimentary fluid
- b) Occurs by 2 means oral and anal trophallaxis
- c) No role in caste differentiation
- d) Provides nutrition

316. In lower termites cellulose digestion is aided by \_\_\_\_

- a) Fungi
- b) Flagellate protozoans
- c) Bacteria
- d) All

317. Choose the wrong pair \_\_\_\_

- a) Fungal garden- Termitomycetes
- b) Higher termites- Fungus and Bacteria
- c) Conidia and conidiophores- Source of vit and organic N
- d) Cellulose- Ligninase

318. Living place of termite is known as \_\_\_\_

- a) Termitaria
- b) Mound
- c) Both a and b
- d) Hive

319. Which is not method of colony Formation in Termites \_\_\_\_

- a) Swarming
- b) Absconding
- c) Budding
- d) Sociotomy

320. According to New Classification, Termites are placed in order \_\_\_\_

- a) Isoptera
- b) Blattodea
- c) Mantodea
- d) Dictyoptera

321. Choose the wrong Pair \_\_\_\_

- a) Termitaria- soil saliva and excreta
- b) Worker- Physogastry
- c) Workers- Dominate colony in no
- d) Termitophiles- other organism than termites in mound

322. Which termite caste is responsible for damaging crop and timber \_\_\_\_

- a) King
- b) Queen
- c) Workers
- d) Soldiers

323. Choose the wrong statement \_\_\_\_

- a) In nasute soldiers, head is drawn into nozzle shaped projection with frontal glands at tip
- b) Sterile castes develop from immature lava having developed wing buds
- c) Termites are nature's scavengers
- d) Termites are polymorphic social insects

324. Choose the wrong statement \_\_\_\_

- a) Wing shedding takes place along basal or humeral suture
- b) External genital organs are lacking in both sexes
- c) Remaining of wing remaining is called scale
- d) Cerci is absent

325. Choose the odd one out \_\_\_\_

- a) Termites
- b) Black ants
- c) White ants
- d) Isoptera

326. Which one of following is not sexually sterile \_\_\_\_
- Nasute soldiers
  - Worker
  - Primary reproductive
  - Mandibulate soldiers
327. Which is not correct about isopterans \_\_\_\_
- Hemimetabolous
  - Membranous wings
  - Wings are identical in size, form and venation
  - Wings are present in sexually immature forms
328. What is not correct about Zoropterans \_
- 9 segmented moniliform antenna
  - Tarsi 2 segmented
  - Cerci long and unsegmented
  - Ovipositor absent
329. Choose the odd one out \_\_\_\_
- Book lice
  - Chewing lice
  - Bark Lice
  - Dust lice
330. Choose the wrong about Book Lice \_\_\_\_
- Sucking type mouth parts
  - Cerci absent
  - Lacinia is rodlike(pick) and swollen clypeus
  - In some psocoids a pair of labial glands modified into silk glands
331. What is not correct about Bird lice \_\_\_\_
- Body is dorsoventrally flattened
  - Primarily wingless insects
  - Mouth parts are biting type with large dentate mandibles
  - Eggs are called nits and are obligate parasites
332. Choose the wrong pair \_\_\_\_
- Liposcelis sp- Book louse
  - Menopon gallinae- associated with Poultry
  - Pthirus pubis- Crab louse
  - Pediculus humanus capitis- Body louse
333. What is correct about Sucking lice \_\_\_\_
- Head is large triangular and broader than thorax
  - Legs are scansorial
  - Mouth parts are biting and chewing type
  - 3 pair slender stylets enclosed in pouch called as stylet sac
334. Choose the wrong about sucking lice \_\_\_\_
- blood sucking Ectoparasites
  - cause Pediculosis
  - Body louse transmit typhus and epidemic fever
  - Holometabolous
335. Choose the wrong pair according to new classification \_\_\_\_
- Megaloptera- dobson flies
  - Raphidioptera- Snake flies
  - Neuroptera- Lace wings
  - None
336. What is not true about antlions \_\_\_\_
- Campodeiform larva
  - exarate pupa
  - Mandibulo suctorial mouth parts in adult
  - Malphigian tubules modified as silk glands



337. What is not correct about green lace wings \_\_\_\_\_

- a) Also known as Ant lions
- b) Golden yellow eyes
- c) Eggs mounted on stalk to avoid predation and cannibalism
- d) Mass multiplied and released for control of Aphids

338. Raptorial legs are found in \_\_\_\_\_

- a) Mantids
- b) Mantophasmatodea
- c) Mantispid flies
- d) Both a and c

339. Choose the wrong pair \_\_\_\_\_

- a) Myrmeleontidae- sickle shaped mandible in larva
- b) Ascalaphidae- Owl flies
- c) Owlflies -resemble damselfly
- d) Dolichasters- Ant lions

340. What is correct about Mecopterans \_\_\_\_\_

- a) oligopod larva
- b) pupa exarate
- c) Sucking mouth parts
- d) Herbivorous insects generally with filiform antenna

341. Choose the correct about Fleas \_\_\_\_\_

- a) Endoparasites
- b) Laterally compressed insects with only 2 ocelli and no eyes
- c) Biting and chewing mouth parts
- d) Members of Strepsipteran order

342. Choose the wrong statements about stylopids \_\_\_\_\_

- a) Flabellate antenna
- b) Completely parasitic insects
- c) Hind wing reduced to small club like structure in male
- d) Mouth parts degenerated biting type

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## **CROP SCIENCE: AGRICULTURAL ENTOMOLOGY**

1. The nitrogen (N<sub>2</sub>) present in atmosphere is
  - a) no use to plants
  - b) injurious to plants
  - c) directly utilized by the plants
  - d) utilized through micro-organism
2. The National Milk Day which marks the birth anniversary of Father of White Revolution Dr. Verghese Kurien is celebrated on \_\_\_\_\_
  - a) November 23
  - b) November 24
  - c) November 25
  - d) November 02
3. Agricultural Scientist M.S. Swaminathan received an honorary medallion from India for his contribution towards the development of agricultural practices from which country \_\_\_\_
  - a) Canada
  - b) Australia
  - c) New Zealand
  - d) Mexico
4. Golden rice variety has been developed to combat the deficiency of -
  - a) Iron (Fe)
  - b) Vitamin C
  - c) Calcium (Ca)
  - d) Vitamin A
5. Most abundant Carbohydrate in the world is
  - a) Pectin
  - b) Rubisco
  - c) Hemicellulose
  - d) Cellulose
6. Which of the following sets of elements were primarily responsible for the origin of life on the Earth \_\_\_\_
  - a) Carbon, Hydrogen, Nitrogen
  - b) Hydrogen, Oxygen, Sodium
  - c) Oxygen, Calcium, Phosphorous
  - d) Carbon, Hydrogen, Potassium
7. There is a parliamentary system of Govt. of India because the \_\_\_\_\_
  - a) Lok Sabha is directly elected by the people
  - b) Parliament can amend the Constitution
  - c) Rajya Sabha cannot be dissolved
  - d) Council of the ministers are responsible to the Lok Sabha
8. Gilt-edged market refers to \_\_\_\_\_
  - a) Bullion market
  - b) Market of Govt. Securities
  - c) Market of guns
  - d) Market of pure metals
9. ICAR, New Delhi has identified three BT cotton varieties for cultivation in Punjab, Haryana and Rajasthan; which were developed by Punjab Agricultural University (PAU), Ludhiana recently. Which one of the following is NOT among those three \_\_\_\_
  - a) PAU BT - 1
  - b) BT - 1861
  - c) F - 1861
  - d) RS - 2013
10. Which one of the following is known as Queen of Spices \_\_\_\_
  - a) Clove
  - b) Pepper
  - c) Nutmeg
  - d) Cardamom

11. In which city has NABARD launched South East Asia's first centre for 'Climate Change' \_\_\_\_\_
- Jaipur
  - Patna
  - Lucknow
  - Chennai
12. Which of the following is the main characteristic of mixed farming \_\_\_\_\_
- Cultivation of both cash crops and food crops
  - Cultivation of two or more crops in the same field
  - Cultivation of crops and rearing of animals together
  - Cultivation of fruits and vegetables
13. World Bank assisted project SMART was launched in -
- Rajasthan
  - Gujarat
  - Maharashtra
  - Punjab
14. When you travelled in certain parts of India, you will notice red soils. What is the main reason for this colour \_\_\_\_\_
- Abundance of magnesium (Mg)
  - Accumulated humus
  - Presence of ferric oxides
  - Abundance of phosphorous (P)
15. A person of mixed European and Indian blood in Latin America is called a -
- Mulato
  - Mestizo
  - Meiji
  - Mau Mau
16. In the context of International Trade 'Early Harvest Package' refers to -
- A precursor to a free trade agreement between two trading partners
  - A clause related to the agreement on agriculture under the WTO
  - A subsidy mechanism given to the developing countries for trade in agriculture
  - A transportation agreement signed between countries for the movement of goods
17. National Research Centre (NRC) for Grapes is located at -
- Nashik
  - Pune
  - Muzaffarpur
  - Lucknow
18. Which of the following is NOT true \_\_\_\_\_
- Khaira is a disease found in paddy
  - False smut is a disease found in barley
  - Rust disease is found in wheat
  - Early blight is a disease found in potato
19. Which of the following is known as the 'Coffee Port' of the world \_\_\_\_\_
- Sao Paulo
  - Santos
  - Rio de Janeiro
  - Buenos Aires
20. For increasing milk production, which state launched Rs. 215 crores project 'Milk Mission' in July, 2018 \_\_\_\_\_
- Meghalaya
  - Assam
  - Tripura
  - Nagaland

## **CROP SCIENCE: PLANT PATHOLOGY, NEMATODOLOGY, ENTOMOLOGY, AGRICULTURAL CHEMICALS**

1. Solid stylet is observed in case of -
  - a) Xiphinema
  - b) Hoplolaimus
  - c) Trichodorus
  - d) Longidorus
2. The clean-up technique of oils and fats in residue analysis is carried out by \_\_\_\_\_
  - a) acid - base partitioning
  - b) acetonitrile - hexene partitioning
  - c) chloroform - hexene partitioning
  - d) cyclohexene - ethyl acetate partitioning
3. Jasmonic acid regulates \_\_\_\_\_
  - a) Induced Systemic Resistance (ISR) only
  - b) Systemic Acquired Resistance (SAR) only
  - c) Hypersensitive Reaction
  - d) Both ISR & SAR
4. Which among the following is a pro insecticide \_\_\_\_\_
  - a) Lindane
  - b) Carbofuran
  - c) Carbosulfan
  - d) Metribuzin
5. The source used in UV Spectrophotometer is
  - a) Deuterium
  - b) Tungsten
  - c) Caesium
  - d) Radium
6. 1,2-glycols, on treatment with acids, give carbonyl compound as product. What is this rearrangement called \_\_\_\_\_
  - a) Pinacol - pinacolone rearrangement
  - b) Benzil - benzilic acid rearrangement
  - c) Beckmann rearrangement
  - d) Fries rearrangement
7. Pine wilt nematode is transmitted by \_\_\_\_\_
  - a) Mite
  - b) Insect
  - c) Wind
  - d) Water
8. The assemblage of all nematode population of an area is called \_\_\_\_\_
  - a) Nematode community
  - b) Nematode habitat
  - c) Nematode population
  - d) Nematode ecosystem
9. The elicitor synthesized and released by gram (-ve) bacteria to trigger hypersensitive reaction is \_\_\_\_\_
  - a) Harpin
  - b) LPS
  - c) Flagellin
  - d) N-acetyl glucose amine
10. Hamulate type of wing coupling mechanism is found in \_\_\_\_\_
  - a) Grasshopper
  - b) Butterfly
  - c) Bug
  - d) Honeybee
11. Gel permeation chromatography (GPC) operates on the principle of \_\_\_\_\_
  - a) Partitioning
  - b) Adsorption
  - c) Ion exchange
  - d) Molecular size and shape

12. Some oils are termed as essential oils because they \_\_\_\_\_
- are essential for plant growth
  - possess insect regulatory activity
  - possess aroma
  - possess allelopathic potential
13. DDT on reaction with alcoholic KOH will yield -
- DDVP
  - DDE
  - DDA
  - DDD
14. Storage kidneys in insects are -
- Malpighian tubules
  - Nephrocytes
  - Oenocytes
  - Labial glands
15. The immature apples and pears are resistant to SCAB disease due to the presence of -
- Phloridzin
  - Protocatechuic acid
  - Dienes
  - Borbinol
16. Which of the following synthetic pyrethroids contains both Cl and F \_\_\_\_\_
- Cyfluthrin
  - Cypermethrin
  - Deltamethrin
  - Fenvalerate
17. Coeloblastula is a stage during -
- Embryonic development
  - Post-embryonic development
  - Moulting
  - Juvenile development
18. Nematode infecting Yam is \_\_\_\_\_
- Hoplolaimus indicus
  - Pratylenchus vulnus
  - Scutellonema bradys
  - Rotylenchus reniformis
19. Biopolymers are detected in GC-MS using which one of the ionizing techniques \_\_\_\_\_
- ESI (Electrospray Ionization)
  - APCI (Atmospheric Pressure Chemical Ionization)
  - FD (Field Desorption)
  - MALDI (Matrix Assisted Laser Desorption/Ionization)
20. Phytoalexins are synthesized through -
- Acetate malonate pathway
  - Pentose phosphate pathway (PPP)
  - Jasmonic acid pathway
  - Shikimic acid pathway
21. Which of the following is NOT true for multiplex PCR \_\_\_\_\_
- Use two sets of primers
  - Decreases diagnostic time
  3. Detects single species
  4. Estimates genetic diversity
22. Under SRI system of rice cultivation, nematodes -
- multiply faster
  - reduce rapidly
  - get killed
  - get suffocated
23. Chemical used for inducing systemic resistance against nematodes is -
- Humic acid
  - Salicylic acid
  - Formic acid
  - Phosphoric acid

24. Identify the rearrangement which leads to ring reduction -
- Pinacol – pinacolone
  - Benzil – benzilic acid
  - Wagner – Meerwein
  - Beckmann
25. Which of the following possesses digestive aspartic protease \_\_\_\_
- Mosquito
  - Beetles
  - Bugs
  - Ant
26. Bimodal transmission is mostly seen in -
- Aphid
  - Leaf hopper
  - White fly
  - Leaf miner
27. Presence of only 3 pairs of well-developed legs, well-developed head and well segmented body are the characteristic of -
- Oligopod larvae
  - Protopod larvae
  - Polypod larvae
  - Platyform larvae
28. Which chromogenic reaction is used for colour development in carbohydrates \_\_\_\_
- 2,4-DNP
  - p-nitrobenzylpyridinium fluoroborate
  - Cyclohexyl amine & pyridine
  - Ferric chloride
29. Which of the following is a liquid formulation \_\_\_\_
- WDG
  - SL
  - WP
  - G
30. Sanger's reagent reacts with which functional groups in a peptide \_\_\_\_
- Free amino group
  - The phenolic hydroxyl group in tyrosine
  - The aromatic heterocyclic rings of histidine and tryptophan
  - The sulphide group of methionine
31. The internal solvent used in NMR Spectroscopy is -
- Tetramethyl silane
  - Trimethyl silane
  - Deuterated water
  - Deuterated chloroform
32. The drying agent used to remove traces of moisture from chloroform is -
- Sodium sulphate ( $\text{Na}_2\text{SO}_4$ )
  - Magnesium sulphate ( $\text{MgSO}_4$ )
  - Anhyd. calcium chloride ( $\text{CaCl}_2$ )
  - Anhyd. zinc sulphate ( $\text{ZnSO}_4$ )
33. An association between two organisms where one organism benefits from the other without affecting the other, is known as \_\_\_\_
- Mutualism
  - Commensalism
  - Amensalism
  - Cleptobiosis
34. At which rate NPV is used for the control of *Helicoverpa armigera* \_\_\_\_
- 50 LE/ha
  - 100 LE/ha
  - 250 LE/ha
  - 750 LE/ha

35. First computer simulation programme of plant disease epidemics was published for \_\_\_\_
- Early blight of tomato
  - Yellow rust of wheat
  - Late blight of potato
  - Early blight of tomato & potato
36. Bioluminescence in squid is due to -
- Vibrio fischeri*
  - Bacillus amyloliquefaciens*
  - Pseudomonas fluorescens*
  - Bacillus subtilis*
37. Mac Lafferty rearrangement takes place in compounds containing -
- Abstractable hydrogen at  $\gamma$ -position carbonyl moiety
  - Chlorine atom and unsaturation in the molecule
  - Unsaturation in the molecule
  - Acid moiety and unsaturation in the molecule
38. Filter chamber is most developed in -
- Hymenoptera
  - Homoptera
  - Dermaptera
  - Lepidoptera
39. A trapping fungus with constricting ring -
- Arthrobotrytis oligospora*
  - Pasteuria penetrans*
  - Trichoderma viride*
  - Fusarium oxysporum*
40. Yellow mosaic virus disease of moong is transmitted by -
- Toxoptera aurantii*
  - Thrips hawaiiensis*
  - Bemisia tabaci*
  - Aptus fobae*
41. The principle of MRL of pesticide on food commodities were laid by -
- FAO
  - Codex Alimentarius Commission
  - WHO
  - EPA
42. Which of the following components cause aroma in rice \_\_\_\_
- Disilicic acid
  - 2-acetyl-1-pyrroline
  - Monosilicic acid
  - 2-acetyl-1-pyridine
43. PGR induces dormancy in -
- Cytokinin
  - Ethylene
  - ABA
  - Auxin
44. Nicotine can be extracted from the tobacco leaves by -
- Hydro distillation
  - Steam distillation
  - Cold extraction
  - Accelerated solvent extraction
45. Longest nematode is -
- Longidorus
  - Placentonema
  - Paralongidorus
  - Xiphinema
46. Plants regenerated from callus are called -
- Monoclones
  - Protoclones
  - Somaclones
  - Oligoclones

47. How many segments are fused in the formation of insect head \_\_\_\_
- a) 3
  - b) 6
  - c) 8
  - d) 10
48. Life cycle duration of *Meloidogyne incognita* is -
- a) 10 - 12 days
  - b) 15 - 20 days
  - c) 28 - 32 days
  - d) 56 - 59 days
49. Chitin is present in -
- a) Cuticle
  - b) Egg shell
  - c) Hypodermis
  - d) Basement membrane
50. The GM cotton was permitted for cultivation in India in the year -
- a) 1992
  - b) 2000
  - c) 2002
  - d) 2005
51. Which of the following statements most correctly defines the isoelectric point \_\_\_\_
- a) The pH at which all the molecular species are ionized and that carry the same charge
  - b) The pH at which all the molecular species are neutral unchanged
  - c) The pH at which half the molecular species are ionized and the other half unionized
  - d) The pH at which negatively and positively charged molecular species are present in equal concentration
52. Which of the following is the connecting link between Arthropoda and Annelida \_\_\_\_
- a) Trilobita
  - b) Onychophora
  - c) Diplopoda
  - d) Chilopoda
53. Dusting of insecticide should not be done if the wind speed exceeds -
- a) 1 km/hr
  - b) 2 km/hr
  - c) 5 km/hr
  - d) 7 km/hr
54. Self-assembling property in water is shown by which class of polymers \_\_\_\_
- a) Hydrophilic
  - b) Hydrophobic
  - c) Amphiphilic
  - d) Ionic
55. The genus *Erwinia* has been reassigned into which of the following four different genera \_\_\_\_
- a) *Erwinia*, *Pantoea*, *Enterobacter*, *Serratia*
  - b) *Erwinia*, *Enterobacter*, *Serratia*, *Ralstonia*
  - c) *Erwinia*, *Pantoea*, *Enterobacter*, *Xylella*
  - d) *Erwinia*, *Pantoea*, *Enterobacter*, *Acidovorax*
56. Anhydrobiosis in nematodes is caused due to \_\_\_\_\_
- a) Lack of oxygen
  - b) Lack of water
  - c) Lowering of temperature
  - d) Removal of water with high osmosis



57. Which is the causal organism of chalk brood disease in honey bees \_\_\_\_\_
- Nosema apis*
  - Ascosphaera apis*
  - Melissococcus plutonius*
  - Paenibacillus larvae larvae*
58. Which of the detectors is used in GLC (Gas Liquid Chromatography) for estimation of compounds containing electro negative groups \_\_\_\_\_
- TSD (Thermionic Specific Detector)
  - TID (Thermionic Ionization Detector)
  - NPD (Nitrogen-Phosphorus Detector)
  - ECD (Electron Capture Detector)
59. Juvenile hormone (JH) is released by -
- Thoracic gland
  - Corpora allata
  - Corpora cardiaca
  - Neurosecretory cells
60. A sequence showing the feeding relationships between organisms in an ecosystem is called -
- Tropic level
  - Niche
  - Food web
  - Food chain
61. Explosive epidemic diseases on most crops are due to -
- Monocyclic pathogens
  - Polycyclic pathogens
  - Soil-borne pathogens
  - Seed-borne pathogens
62. Jew's ear mushroom is -
- Auricularia
  - Morchella
  - Agaricus
  - Boletus
63. Name of bio-control agent applied under large scale for the first time in the world was -
- Trichoderma viride*
  - Bacillus subtilis*
  - Peniophora gigantea*
  - Pseudomonas fluorescens*
64. The lethal time required to kill 50% of population of test animal at a certain dose or concentration is called -
- ED50
  - LD50
  - LT50
  - ET50
65. HRGP (hydroxyproline-rich glycoproteins) that agglutinate the bacterial cell is -
- Extensin
  - Lectin
  - Proline
  - Defensin
66. Which of the following is the invasive insect reported from India in 2018 \_\_\_\_\_
- Tuta absoluta*
  - Spodoptera frugiperda*
  - Helicoverpa zea*
  - Acigona steniellus*
67. The antibiotic Zwittermycin is produced by \_\_\_\_\_
- Trichoderma asperellum*
  - Bacillus cereus*
  - Pseudomonas putida*
  - Bacillus velezensis*

68. Kalahasti Malady was reported in India from \_\_\_\_\_
- Karnataka
  - Kerala
  - Andhra Pradesh
  - Tamil Nadu
69. Quarantine pathogen is -
- Tobacco streak virus of cotton
  - FOC – TR4 of banana
  - Groundnut bud necrosis virus in tomato
  - Root knot nematode in banana
70. The agreement on the application of sanitary and phytosanitary measure came into force with the establishment of WTO during \_\_
- 1975
  - 1985
  - 2005
  - 1995
71. Which of the following imparts resistance in mustard against insect – pests \_\_\_\_\_
- Sinigrin
  - Silica
  - Gossypol
  - Ricin
72. If two isomers have been classified correctly as anomers, they may also be called as -
- Conformers
  - Enantiomers
  - Tautomers
  - Diastereomers
73. In electron microscopy, condensers used are \_\_\_\_\_
- Magnetic
  - Optic
  - Semi optic
  - Electrical
74. The phylum which has the important crop pathogens in the kingdom protozoa is -
- Myxomycota
  - Dictyosteliomycota
  - Acrasiomycota
  - Plasmodiophoromycota
75. The number of instars in Ephemeroptera may be -
- 5 – 7
  - 9 - 14
  - 22 - 23
  - 20 - 40
76. Stubby root disease is caused by -
- Longidorus
  - Criconema
  - Hemicycliophora
  - Trichodorus
77. Total stage in nematode development is/are -
- 6
  - 4
  - 2
  - 1
78.  $\beta$ -aminobutyric acid includes -
- SAR
  - ISR
  - HRGP
  - ISR & SAR
79. Mode of action in c is inhibition of -
- Cell division
  - Protein synthesis
  - Mitochondrial electron transport
  - Nucleic acid synthesis

80. Threshold level of *Globodera rostochiensis* is \_\_\_\_
- 5 cysts/100 g soil
  - 10 cysts/100 g soil
  - 30 cysts/100 g soil
  - 50 cysts/100 g soil
81. The type of secretory system in bacteria responsible for the transport of effector proteins across bacterial membrane and into plant cell is \_\_\_\_
- Type I ss
  - Type III ss
  - Type IV ss
  - Type V ss
82. When there is high age specific survival probability of a population in early and middle life followed by a rapid decrease in survival, the type of survival curve will be \_\_\_\_
- Concave
  - Convex
  - Diagonal
  - Zig-zag
83. Which of the following reagents selectively reduces the carbonyl group without affecting the double bond in an unsaturated aldehydic molecule \_\_\_\_
- Zn/HCl
  - $\text{LiAlH}_4$
  - $\text{NaBH}_4$
  - Raney-Ni
84. The causal agent of Tobacco Mosaic is filterable through bacteriological filters and can be crystalized. It was proposed by \_\_\_\_
- Ivanowski; Michali
  - Ivanowski; Van der Plank
  - Flor; Stanley
  - Ivanowski; Stanley
85. Interference of effector molecules of pathogen with PAMP triggered immunity results in \_\_\_\_
- Effector triggered immunity
  - Effector triggered susceptibility
  - Pattern triggered susceptibility
  - Suppression of basal resistance
86. Which of the following dithiocarbamate fungicide contains both Zn and Mn \_\_\_\_
- Propineb
  - Mancozeb
  - Zineb
  - Thiram
87. The suffix "Oidea" is associated with \_\_\_\_
- Order
  - Family
  - Suborder
  - Super family
88. Fungicide first reported to depict resistance was \_\_\_\_
- Metalaxyl
  - Organomercury
  - Dodine
  - Pyrimidine
89. Which of the following DOES NOT fall under inorganic fungicides \_\_\_\_
- Sulfur
  - Copper oxide
  - Fentin hydroxide
  - Chlorothalonil
90. The type of antenna found in sawflies is -
- Capitate
  - Flabellate
  - Unipectinate
  - Bipectinate

91. Which of the following was imported in India for the control of cottony cushion scale \_\_
- Apanteles flavipes
  - Rodolia cardinalis
  - Bracon gelechae
  - Aphelinus mali
92. In mouth parts of butterflies, the proboscis is modification of -
- Cardo
  - Stipes
  - Lacinia
  - Galea
93. Virus transmission by nematodes was first reported by -
- Hirschmann
  - Filipjev
  - Hewitt and Raski
  - Goodey
94. Quercus incana is a food plant of -
- Antheraea proylei*
  - Philosamia ricini*
  - Antheraea assamensis*
  - Antheraea mylitta*
95. Glyceel is used to -
- fix nematodes
  - mount nematodes on slides
  - process nematodes
  - seal nematodes on slides
96. Suppressive soil concept was first proposed by -
- Cook and Baker
  - Menzies
  - Hornby
  - Baker and Cook
97. Mastigonemes and mycolaminarin are the characteristic features associated with -
- Eumycota
  - Oomycota
  - Basidiomycota
  - Deuteromycota
98. Paper chromatography is an example of -
- Partition chromatography
  - Adsorption chromatography
  - Flash chromatography
  - Ion exchange chromatography
99. Taxonomy at evolution level is called -
- Numerical taxonomy
  - Alpha taxonomy
  - Beta taxonomy
  - Gamma taxonomy
100. Resilin is extremely rich in -
- Cystine
  - Glycine
  - Threonine
  - Phenylalanine
101. RNA viruses are detected through -
- Colony PCR
  - RT-PCR
  - Bio-PCR
  - RADP-PCR
102. Millipedes are included in -
- Diplopoda
  - Chilopoda
  - Chelicerata
  - Hexapoda
103. Lac is marketed as -
- Brood lac
  - Seed lac
  - Button lac
  - Shellac

104. 15% resolving gel separates proteins having molecular weights in which of the following ranges -
- 10 – 30 kDa
  - 30 – 100 kDa
  - <10 kDa
  - >500 kDa
105. The numbers of isomers present in technical HCH is -
- 12
  - 8
  - 14
  - 16
106. Which country ranks first in silk production \_\_\_\_\_
- India
  - China
  - Japan
  - Sri Lanka
107. Mobilization of stored products to the developing appressorium is regulated by -
- cAMP signalling pathway
  - MAP kinase pathway
  - SA signalling pathway
  - JA signalling pathway
108. Which one of the following is an Ichneumonid parasitoids \_\_\_\_\_
- Apanteles flavipes*
  - Trichogramma chilonis*
  - Tetrastichus pyrillae*
  - Aphelinus mali*
109. The fungicide mancozeb DOES NOT contain the following element -
- Lead
  - Zinc
  - Manganese
  - Carbon
110.  $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl}$  undergoes nucleophilic substitution by which mechanism \_\_\_\_\_
- S<sub>N</sub>1
  - E1
  - S<sub>E</sub>1
  - S<sub>N</sub>2
111. Transcript level of gene expression under host pathogen interaction is quantified through \_\_\_\_\_
- ERIC PCR
  - Box PCR
  - Real Time PCR
  - REP PCR
112. St. Anthony's fire is related to -
- Fire blight and Erwinia
  - Ergotamine and Erwinia
  - Ergotism and Mycotoxicosis
  - Fire blight and Claviceps
113. Which of the following is a permanent mounting medium \_\_\_\_\_
- Formalin
  - Glycerol
  - Euparal
  - DPX
114. Azoxystrobin is a/an \_\_\_\_\_
- Insecticide
  - Herbicide
  - Fungicide
  - Rodenticide
115. Mushroom with increased shelf life is -
- Volvariella volvacea*
  - Pleurotus sajor caju*
  - Calocybe indica*
  - Pleurotus florida*

116. For histopathological nematology, the sections are stained with \_\_\_\_
- Silver nitrate
  - Acid fuchsin
  - Hematoxylin
  - Safranin-fast green
117. Identify the  $\delta$  value of aliphatic protons in following molecule \_\_\_\_
- 3.1
  - 4.8
  - 1.4
  - 5.9
118. Organophosphorus insecticides act by inhibiting -
- GABA channel
  - Sodium channel
  - Acetylcholine
  - ALS
119. The factor directly affecting ground wated pollution due to pesticides is \_\_\_\_
- Absorption
  - Adsorption
  - Leaching
  - Volatilization
120. Which of the following is a Mycoherbicide
- COLLEGO
  - F-Stop
  - Mycostop
  - BINAP-T
121. Scientific name of purple mite infesting tea plants is \_\_\_\_
- Polyphagotarsonemus latus*
  - Calacarus carinatus*
  - Acaphylla theae*
  - Brevipalpus californicus*
122. Caudal glands and spinnerets are prominent in \_\_\_\_
- Mononchus
  - Meloidogyne
  - Heterodera
  - Hoplolaimus
123. Longidorus, virus particles are retained in \_\_\_\_
- Oesophagus
  - Inner lining of odontostyle
  - Cuticular lining of stoma
  - Odontophore
124. The condition where nematode eggs hatch inside the female dead body is known as:
- Ovovivipary
  - Endotokia matricida
  - Vivipary
  - Ovipary
125. A viral disease dwindling button mushroom production in Europe is -
- Dry bubble
  - X-disease
  - Mummy disease
  - Cobb web
126. Target site of action of strobilurin fungicide is \_\_\_\_
- $\beta$ -tubulin
  - Ubiquinol oxidases
  - Succinate dehydrogenase
  - Phospholipid biosynthesis
127. What is the other name for fronto-clypeal sulcus \_\_\_\_
- Sub-ocular sulcus
  - fronto-genal sulcus
  - Sub-genal sulcus
  - Epistomal sulcus

128. Azadirachtin belongs to which class of compounds \_\_\_\_
- Triterpenoid
  - Alkaloid
  - Nicotine amide
  - Diamide
129. Infective stage in reniform nematode is -
- Egg
  - Second stage juvenile
  - Pre-adult
  - Adult
130. Circum-oesophageal commissure represents \_\_\_\_
- Reproductive system
  - Excretory system
  - Digestive system
  - Nervous system
131. Identify the plant with biofumigant property \_\_\_\_
- Sesbania
  - Crotolaria
  - Mustard
  - Marigold
132. Coat protein mediated transgenic resistance is demonstrated in \_\_\_\_
- Cassava
  - Papaya
  - Tomato
  - Banana
133. Which of the following develops burning symptoms of crop in rice field \_\_\_\_
- Dicladispa armigera*
  - Oligonychus oryzae*
  - Nilaparvata lugens*
  - Stenchaetothrips*
134. The virus always associated with satellite RNA is \_\_\_\_
- Banana bract mosaic virus
  - Mungbean yellow mosaic virus
  - Tomato leaf curl virus
  - Cucumber mosaic virus
135. In which of the following larvae, the spiracles are absent \_\_\_\_
- Cecidomyids
  - Psycodids
  - Chironomids
  - Mycetophilids
136. The Bordeaux mixture was an accidental discovery by -
- Robert Koch
  - PMA Millardet
  - JC Walker
  - Louis Pasteur
137. Imazethapyr is \_\_\_\_
- Insecticide
  - PGR
  - Herbicide
  - Fungicide
138. The first disease resistance gene was cloned by \_\_\_\_
- Johal and Briggs (1992)
  - Williams (1998)
  - Dehury et al (1996)
  - Rossi et al (1998)
139. Adhesion and appressorial development in fungal pathogens are due to -
- Hydrophobin
  - Thionin
  - Defensin
  - Lipid transfer protein

140. *Melissococcus plutonius* causes which of the following disease \_\_\_\_
- Stone brood
  - American foul brood
  - Sac-brood
  - European foul brood
141. Which is the strongest oxoacid \_\_\_\_
- H<sub>3</sub>PO<sub>4</sub>
  - HCl
  - HClO<sub>4</sub>
  - HNO<sub>3</sub>
142. The avr determinant of the R gene SW5 in tomato codes for \_\_\_\_
- Coat protein
  - RNA dependent RNA polymerase
  - Movement protein
  - Glycoprotein
143. Which of the following group of insects is famously species richer \_\_\_\_
- Hymenoptera
  - Coleoptera
  - Hemiptera
  - Diptera
144. Which software is used for performing phylogenetic analysis \_\_\_\_
- Model Test
  - PAUP
  - DATABASE
  - PHYLOGEN
145. Tea mosquito belongs to the order -
- Hemiptera
  - Diptera
  - Hymenoptera
  - Psocoptera
146. Identify the Genus of sting nematode -
- Dolichodorus
  - Criconema
  - Belonolaimus
  - Hemicycliophora
147. Post-uterine sac is present in \_\_\_\_
- Radopholus
  - Helicotylenchus
  - Rotylenchulus
  - Pratylenchus
148. Identify the organization that certifies laboratory accreditation in India -
- OECD
  - NABL (National Accreditation Board for Testing and Calibration Laboratories)
  - NCIPM
  - FSSAI
149. Virus that requires a helper virus for transmission through aphid \_\_\_\_
- Closterovirus
  - Carlavirus
  - Potyvirus
  - Potexvirus
150. Name the active principle in chilli \_\_\_\_
- Carotene
  - Lycopene
  - Capsaicin
  - Rotenone
151. In moth, deformed wings are developed due to deficiency of \_\_\_\_
- Lysine
  - Arachidonic acid
  - Pantothenic acid
  - Linoleic acid



152. Which is the weakest hydracid \_\_\_\_\_
- HCOOH
  - HCN
  - CH<sub>3</sub>COOH
  - HNO<sub>3</sub>
- 153 Name the reaction used for the synthesis of next higher homologue of an acid -
- Arndt-Eistert synthesis
  - Lossen's reaction
  - Curtis reaction
  - Witting reaction
154. Which of the following insecticides is meant for managing sucking insect-pests \_\_\_\_\_
- Flubendiamide
  - Chlorantraniliprole
  - Fenvalerate
  - Thiamethixam
155. Deirids are sensory structures located in
- Oesophageal region
  - Caudal region
  - Cephalic region
  - Reproductive region
156. Taxonomic monogram was prepared by \_
- Needham, 1743
  - Berkeley, 1885
  - Kuhn, 1862
  - DeMan, 1950
157. Potato cyst nematode was first reported in Nilgiris by \_\_\_\_\_
- Sharma, K
  - Luc, M
  - Maggenti, K
  - Jones, F. G. W.
158. "Dak Pora" disease is caused by \_\_\_\_\_
- Ditylenchus dipscaci*
  - Ditylenchus phyllobia*
  - Ditylenchus angustus*
  - Ditylenchus destructor*
159. Which of the following is used in mosquito repellent coils \_\_\_\_\_
- Deltamethrin
  - Cypermethrin
  - Allethrin
  - Cyhalothrin
160. Removal or inactivation of active oxygen species in the host is done by which plant pathogen \_\_\_\_\_
- Biotrophic relation
  - Hemibiotrophic relation
  - Necrotrophic relation
  - Saprophytic relation
161. Xa21 is a/an -
- avr gene
  - R gene
  - PRR
  - PAMP
162. Which insecticides among the following falls in the 'least toxic' category \_\_\_\_\_
- Malathion
  - Carbofuran
  - Flubendamide
  - Insidactoprid
163. Which of the following order of insects has maximum number of parasitoids species \_\_\_\_\_
- Hymenoptera
  - Diptera
  - Hemiptera
  - Lepidoptera
164. The trade name of Glyphosate is \_\_\_\_\_
- Round up
  - Kavach
  - Stomp
  - Rifit

165. The pigment haemoglobin is found in the haemolymph of \_\_\_\_\_
- Red Chironomus
  - Red cotton bug
  - Red pumpkin beetle
  - Mosquito
166. Nematodes parasitic to insects belong to which family \_\_\_\_\_
- Entaphelenchidae
  - Aphelenchidae
  - Paraphelenchidae
  - Tylenchidae
167. Pebrine disease of silkworm is caused by
- Bacillus popilliae*
  - Bacillus sotto*
  - Isaria farinosa*
  - Nosema bombycis*
168. Which of the following is a hydraulic energy sprayer \_\_\_\_\_
- Compression knapsack sprayer
  - Motorized knapsack sprayer
  - Knapsack sprayer
  - Ultralow volume sprayer
169. The red colour in tomato fruit is due to the presence of \_\_\_\_\_
- Beta-carotene
  - Ricin
  - Xanthophyll
  - Lycopene
170. Nematode excretion involves \_\_\_\_\_
- Ornithine cycle
  - TCA cycle
  - Lipid metabolism
  - Protein metabolism
171. RNA genome of plant viruses is \_\_\_\_\_
- Monocistronic only
  - Polycistronic only
  - Both Monocistronic and Polycistronic
  - Dicistronic
172. Specialised cells formed at the feeding site of cyst nematodes are \_\_\_\_\_
- Nurse cells
  - Giant cell
  - Syncytia
  - Transfer cells
173. Name the design used for simple pot experiments in laboratory \_\_\_\_\_
- Random block design
  - Complete randomized design
  - Split plot design
  - Latin square design
174. Congress grass can be controlled by using
- Opuntia dillenii*
  - Teleonemia scrupulosa*
  - Zygogramma bicolorata*
  - Rodolia cardinalis*
175. The main food reserve in nematodes is -
- Carbohydrates
  - Glycogen
  - Carbon
  - Glucose
176. Skraup synthesis exclusively deals with the synthesis of \_\_\_\_\_
- Isoquinoline
  - Indole
  - Pyrimidine
  - Quinoline

177. Fatty acid based finger printing is used to detect or identify \_\_\_\_\_

- a) Fungi
- b) Virus
- c) Bacteria
- d) Viroids

178. Spiral amphidial aperture is seen in -

- a) Mononchus
- b) Chromodoria
- c) Xiphinema
- d) Longidorus

179. The signal in <sup>1</sup>H-NMR of o-hydroxy acetophenone at around 11δ is because of -

- a) Aromatic protons
- b) Aliphatic protons
- c) Hydroxy group
- d) Intramolecular H-bonding

180. Royal jelly in honeybee is produced by -

- a) Drones only
- b) Queen only
- c) Worker bees only
- d) Both Queen and Worker bees

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**ICAR AICE-JRF/SRF(Ph.D.) – 2020**

**SUBJECT: AGRICULTURAL ENTOMOLOGY**

**SECTION: PART A – GENERAL KNOWLEDGE**

1. Where is the headquarters of European Union (EU) \_\_\_\_
    - a) Geneva, Switzerland
    - b) Washington D.C., USA
    - c) New York, US
    - d) Brussels, Belgium
  2. Which one of the following countries was the partner country of 34th Surajkund International Crafts Fair held in Haryana \_\_\_\_
    - a) China
    - b) Nepal
    - c) Bhutan
    - d) Uzbekistan
  3. Which one of the following crops is a commercial crop in Punjab and Haryana but a subsistence crop in Orissa \_\_\_\_
    - a) Tea
    - b) Cotton
    - c) Rubber
    - d) Rice
  4. Amazon rainforest span over nine countries. In August 2019, in which country did a deadly fire broke out in the Amazon Forest \_\_\_\_
    - a) Brazil
    - b) Venezuela
    - c) Colombia
    - d) Argentina
  5. Under the Ganga Action Plan Phase II, pollution abatement works are being taken up in how many towns \_\_\_\_
    - a) 57
    - b) 65
    - c) 52
    - d) 69
  6. Nobel laureate Abhijit Vinayak Banerjee was conferred the honorary Doc of Letters (D. Litt.) by which University \_\_\_\_
    - a) University of Delhi
    - b) University of Kolkata
    - c) University of Mumbai
    - d) University of Hyderabad
  7. Which of the following are the two most wheat-growing zones of the country \_\_\_\_
    - a) Ganga-Sutlej plains in the North-West
    - b) Deltaic regions
    - c) Black soil region of the Deccan
    - d) Plains of North-East
- Choose the correct answer from the option below:
- a) Only A and B
  - b) Only B and C
  - c) Only C and D
  - d) Only A and C
8. Which one of the following statements is incorrect \_\_\_\_
  - a) The highest number of pigs in the world are found in India
  - b) Uttar Pradesh provides largest amount of pork
  - c) Assam has the largest number of pork producing pigs
  - d) Pork constitutes about 7.6 % of the total meat produced in India

9. The term 'Delimitation' which was in news recently is associated with which process \_\_\_\_

- a) Fixing the limit of Income tax
- b) Fixing limits of Affordable housing
- c) Fixing limits of Territorial constituencies
- d) Fixing limits of Chairpersons salary

10. A farmer wishes to start a 100 s m rectangular vegetable garden. Since he has only 30m barbed wire, he fences three sides of the garden letting his house compound wall act as the fourth side fencing. What is the dimension of the garden \_\_\_\_

- a) 15m x 6.67m
- b) 20m x 5m
- c) 30m x 33.3m
- d) 40m x 2.5m

11. Which one of the following is a global association of nations of the world to help cooperation in international law, security, economic development and social equity \_\_\_\_

- a) United Nations Organization
- b) International Monetary Fund
- c) World Bank
- d) World Health Organization

12 Indian agriculture is typically characterized as \_\_\_\_

- a) Land surplus, labour scarce economy
- b) Land surplus, labour surplus economy
- c) Land scarce, labour surplus economy
- d) Land scarce, labour scarce economy

13. In which one of the following industries, the consumption of natural rubber is the largest \_\_\_\_

- a) Auto tyres and tubes
- b) Footwear
- c) Dipped goods
- d) Latex foam

14 Given below are two statements:

Statement A: MSP is declared by the government every year to provide incentives to the farmers for raising the producing of crops.

Statement B: Buffer stock is created to distribute food grains in the deficit areas and among the poorer strata of the society at the lower price than the market price.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement A and Statement B are correct
- b) Both Statement A and Statement B are incorrect
- c) Statement A is correct but Statement B is incorrect
- d) Statement A is incorrect but Statement B is correct

15. Which one of the following countries is the main rival of India in tea export \_\_\_\_

- a) China
- b) Japan
- c) Germany
- d) Sri Lanka

16. Which type of N-fertilizer is suitable for water-logged soils \_\_\_\_

- a) Zinc Phosphate
- b) Ammonium Sulphate
- c) Calcium
- d) Potassium Nitrate

17. Economic liberalization in India started with -

- a) Sustainable changes in industrial licensing policy
- b) The convertibility of the Indian Rupee
- c) Significant reduction of tax rates
- d) Changes in procedural formalities for FDI

18. The famous Bailadila range of hills in the Bastar district of Chhattisgarh is famous for its

- a) Bauxite deposits
- b) Manganese deposits
- c) Copper deposits
- d) High-grade haematite deposits

19. Which one of the following would be deficient if one finds high somatic cell count in the cow's milk \_\_\_\_\_

- a) Butter fat
- b) Whey protein
- c) Casein
- d) Trace minerals

20 Who was the first administrator-statesman to attempt planning as a means for economic development \_\_\_\_\_

- a) C. Rajagopalachari
- b) V. T. Krishnamachari
- c) M. Viswesvarayya
- d) Sir C. P. Ramaswami Aiyar

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**SECTION: PART B –  
CORE CROP SCIENCE – II**

1. *Globodera rostochiensis* is a major problem in \_\_\_\_
  - a) Sweet potato
  - b) Potato
  - c) Wheat
  - d) Beet root
2. *Romanomermis culicivora* is a parasite of \_
  - a) Snails
  - b) Mosquitoes
  - c) Grasshoppers
  - d) Bats
3. Exogenous stimulant favouring *Striga* seed germination is \_\_\_\_
  - a) Salicylic acid
  - b) Lipopolysaccharide
  - c) Coumarins
  - d) Glucosamine
4. The hallucinogenic mushroom used by Mexicans in religious functions is \_\_\_\_
  - a) *Psilocybe cubensis*
  - b) *Fomitopsis officinalis*
  - c) *Amanita muscaria*
  - d) *Boletus edulis*
5. Components required to prepare chestnut compound is \_\_\_\_
  - a) Copper sulphate and ammonium carbonate
  - b) Copper hydroxide and ammonium carbonate
  - c) Copper sulphate and ammonium chloride
  - d) Copper sulphate and ammonium nitrate
6. Given below are two statements:  
Statement I: Chromosome number in *Antheraea roylei* is  $n = 31$   
Statement II: Chromosome number in *Antheraea mylitta* is  $n = 21$   
In light of the above statements, Choose the most appropriate answer from the option given below:
  - a) Both Statement I and Statement II are correct
  - b) Both Statement I and Statement II are incorrect
  - c) Statement I is correct but Statement II is incorrect
  - d) Statement I is incorrect but Statement II is correct
7. Dorylaimid group of nematodes are vectors of \_\_\_\_
  - a) Virioids
  - b) Plant viruses
  - c) Phytoplasmas
  - d) Bacteria
8. White tip disease of rice is caused by \_\_\_\_
  - a) *Aphelenchus avenae*
  - b) *Globodera rostochiensis*
  - c) *Aphelenchoides besseyi*
  - d) *Aphelenchoides arachidis*
9. The total number of eggs laid by a female during the entire life is called as \_\_\_\_
  - a) Fecundity
  - b) Natality
  - c) Fidelity
  - d) Voltinity

10. Osmoregulatory cells found in the abdominal gills of aquatic insects are called \_\_\_\_
- Urocytes
  - Trophocytes
  - Mycetocytes
  - Chloride cells
11. Selective medium used to isolate *Trichoderma* from soil was identified by \_\_\_\_
- Kloepper
  - Elad and Chet
  - Grente
  - Menzies
12. Terminal spindle-shaped root galls in rice are caused by \_\_\_\_
- Heterodera oryzicola*
  - Meloidogyne incognita*
  - Meloidogyne graminicola*
  - Meloidogyne hapla*
13. Mobile DNA segments capable of moving between prokaryotes and eukaryotes are known as \_\_\_\_
- Transposons
  - Plasmids
  - Episomes
  - Chromatin
14. Match List I and List II
- | List I                     | List II         |
|----------------------------|-----------------|
| A. Cultivation of mulberry | I. Trashing     |
| B. Silk route              | II. Hatching    |
| C. Egg                     | III. Emergence  |
| D. Moth                    | IV. Morigulture |
- Choose the correct answer from the options given below:
- A – IV, B – I, C – II, D – III
  - A – IV, B – II, C – III, D – I
  - A – III, B – IV, C – II, D – I
  - A – IV, B – III, C – I, D – II
15. High-efficiency particulates air (HEPA) filter is seen in \_\_\_\_
- BOD incubator
  - Laminar flow
  - Bio reactor
  - refrigerator
16. The vector of the papaya mosaic virus is -
- Aphis gossypii*
  - Aphis craccivora*
  - Myzus persicae*
  - Acerophagus papaya*
17. Ideal winnowing and salt water treatment is the best method of control \_\_\_\_
- Anguina tritici*
  - Aphelenchoides* spp.
  - Meloidogyne* spp.
  - Pratylenchus* spp.
18. Nematodes can be preserved for a long period in formaldehyde at a concentration (%) of \_\_\_\_
- 1-2
  - 2-4
  - 4-6
  - 6-8
19. Organic Sulphur based fungicide with nematicidal and fumigant action is -
- Ferbam
  - Vapam
  - Nabam
  - Thiram
20. When host is parasitized by two or more species of parasitoids/parasites, the relationship is called -
- Super parasitism
  - hyper parasitism
  - Multiple parasitism
  - Simple parasitism



21. Which one of the following has no fumigant action \_\_\_\_
- Aluminium phosphide
  - Magnesium phosphide
  - Bromadiolone R
  - Phosphamidon
22. Chemical reaction occurring while preparing Bordeaux mixture -
- $\text{CuSO}_4 + \text{Ca}(\text{OH})_2 = \text{CuO}_2 + \text{CaSO}_4$
  - $\text{CuSO}_4 + \text{Ca}(\text{OH})_2 = \text{CuO} + \text{CaSO}_4 + \text{H}_2\text{O}$
  - $\text{CuSO}_4 + \text{Ca}(\text{OH})_2 = \text{Cu}(\text{OH})_2 + \text{H}_2\text{S}$
  - $\text{CuSO}_4 + \text{Ca}(\text{OH})_2 = \text{Cu}(\text{OH})_2 + \text{CaSO}_4$
23. Plant parasitic nematodes are \_\_\_\_
- Vertebrates
  - Invertebrates
  - Arthropods
  - Annelids
24. The active principle with antifungal activity in Bordeaux mixture is \_\_\_\_
- Copper sulphate
  - Calcium sulphate
  - Copper hydroxide
  - Calcium hydroxide
25. The H. M. Smits is known for his contribution for completing first sequenced whole genome of \_\_\_\_
- Erwinia amylovora*
  - Bacillus subtilis*
  - Klebsiella pneumoniae*
  - Xanthomonas oryzae pv oryzae*
26. Gause's hypothesis in the ecological study is closely related to \_\_\_\_
- Predation
  - Mutualism
  - Competition
  - Parasitism
27. Potential parasitoid of *Paracoccus marginatus* (Papaya mealybug) is \_\_\_\_
- Encarsia guadeloupae*
  - Chrysoperla zastrowi sillemi*
  - Goniozus nephantidis*
  - Acerophagus papayae*
28. Given below are two statements:  
Statement I: Tiger band disease is a native of India and it infects oak Tasar silkworm  
Statement II: Tiger band disease of silkworm attacks all Indian silkworm species
- In light of the above statements, Choose the most appropriate answer from the option given below:
- Both Statement I and Statement II are correct
  - Both Statement I and Statement II are incorrect
  - Statement I is correct but Statement II is incorrect
  - Statement I is incorrect but Statement II is correct
29. The vector of the rice tungro disease is \_\_\_\_
- Nilaparvata lugens*
  - Nephotettix nigropictus*
  - Cofana spectra*
  - Breveria reli*
30. The queen of textiles is \_\_\_\_
- Cotton
  - Wool
  - Silk
  - Linen

31. Nematodes can be extracted from soil using \_\_\_\_
- Mystifier technique
  - Fenwick can
  - Cobb's decanting and sieving
  - Fenwick can and sugar flotation
32. Which one of the following is known as the tasar silkworm \_\_\_\_
- Antheraea proylei*
  - Antheraea assamensis*
  - Samia ricini*
  - Antheraea mylitta*
33. The first R gene identified in 1992 was in which one of the following crops \_\_\_\_
- Tomato
  - Maize
  - Potato
  - Paddy
34. The correct sequence of events associated with indirect ELISA is -
- Antigen – Unlabelled primary antibody – Enzyme labelled secondary antibody
  - Labelled primary antibody – Antigen - Enzyme labelled secondary antibody
  - Antigen – Labelled antibody - Enzyme labelled secondary antibody
  - Unlabelled primary antibody – Antigen - Enzyme labelled secondary antibody
35. The NPR-1 gene that coordinates both ISR (Induced Systemic Resistance) and SAR (Systemic Acquired Resistance) is active at -
- Oligomeric form
  - Monomeric form
  - Dimeric form
  - Hirsutella thompsonii*
36. Telea form larva is present in \_\_\_\_
- Ichneumonidae
  - Tenthredinidae
  - Scelionidae
  - Tachinidae
37. The Destructive Insects and Pests Act (DIPA) was passed in the year -
- 1920
  - 1914
  - 1924
  - 1934
38. During the process of rearing, which one of the following oviposits most on a plain smooth surface \_\_\_\_
- Mulberry silkworm
  - Eri silkworm
  - Oak Tasar silkworm
  - Tasar silkworm
39. When can an entire branch containing leaves be fed to the larvae of *Bombyx mori* \_\_\_\_
- Neonate
  - 2<sup>nd</sup> instar
  - 3<sup>rd</sup> instar
  - 4<sup>th</sup> and 5<sup>th</sup> instar
40. Which one of the following is an external feeder on stored products \_\_\_\_
- Plodia interpunctella*
  - Cylas formicarius*
  - Lasioderma serricornis*
  - Sitophilus oryzae*
41. The first scientific account of the lac insect was published in the year \_\_\_\_
- 1782
  - 1872
  - 1827
  - 1754

42. In a honey bee's digestive system, the ripening of honey takes place in the \_\_\_\_\_

- a) Proventriculus
- b) Stomodeum
- c) Hepatic caecum
- d) Rectum and anal glands

43. Given below are two statements:

Statement I: Chowki rearing refers to the rearing of young silkworm larvae under a controlled microclimate

Statement II: *Antheraea proylei* is a cross between *A. pernyi* and *A. roylei*

In light of the above statements, Choose the most appropriate answer from the option given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

44. Which one of the following is NOT a field cum storage pest \_\_\_\_\_

- a) *Cylas formicarius*
- b) *Oryzaephilus surinamensis*
- c) *Callosobruchus chinensis*
- d) *Phytorimaea operculella*

45. Central Muga Eri Research and Training Institute is in -

- a) Manipur
- b) Assam
- c) West Bengal
- d) Odisha

46. Nematodes used for insect control are \_\_\_\_\_

- a) Steinernema
- b) Rhabdids
- c) Diplogstrids
- d) Seinura spp.

47. The signal molecule(s) involved in ISR is/are \_\_\_\_\_

- a) Jasmonic acid only
- b) Salicylic acid only
- c) Ethylene only
- d) Jasmonic acid and ethylene

48. Match List I and List II

List I	List II
A. Grasserie	I. Fungal hyphae
B. Pebrine	II. Polyhedral
C. Flacherie	III. Oval spores
D. Muscardine	IV. Bacteria

Choose the correct answer from the options given below:

- a) A – IV, B – I, C – III, D – II
- b) A – II, B – III, C – IV, D – I
- c) A – III, B – II, C – I, D – IV
- d) A – I, B – III, C – II, D – IV

49. Spatial arrangement of individuals of the population is called as \_\_\_\_\_

- a) Dispersion
- b) Density
- c) Population
- d) Distribution

50. Hyperparasite of powdery mildew pathogens is \_\_\_\_\_

- a) *Verticillium lecanii*
- b) *Ampelomyces quisqualis*
- c) *Darlucal filum*
- d) *Hirsutella thompsonii*

**SECTION: PART C –  
AGRICULTURAL ENTOMOLOGY**

- The statistical empirical models used for assessment of crop losses due to insects are based \_\_\_\_
  - Simulation approach
  - Regression approach
  - Continuous approach
  - Qualitative approach
- Classical biocontrol agent for the control of the weed, prickly pear cacti is \_\_\_\_
  - Dactylopius ceylonicus*
  - Cryptobagous salviviae*
  - Neochetina bruchu*
  - Nipaecoccus spp.*
- The obligate cave dwelling insects are called as \_\_\_\_
  - Pyrophilous
  - Xylophagous
  - Troglobiont
  - Coprophages
- Which pump is fitted in the high-pressure boom sprayer with more than 500 litre/ha capacity \_\_\_\_
  - Rotary pump
  - Plunger pump
  - Centrifugal pump
  - Piston pump
- The petiole in honey bee is formed by -
  - First abdominal segment
  - First abdominal segment and metathorax
  - Second abdominal segment
  - Metathorax
- The greatest nutritional distinction between the insects and vertebrates is that \_\_\_\_
  - Insects need carbohydrates
  - Insects need an external source of sterols
  - insects need amino acids
  - Insects need fatty acids
- Pyriproxifen is a \_\_\_\_
  - Chitin synthesis inhibitor
  - Trypsin inhibitor
  - Juvenile hormone inhibitor
  - Lipid synthesis inhibitor
- The minimum population density of an insect or its damage which can be measured in the field is called \_\_\_\_
  - Economic damage
  - Economic threshold level
  - Damage threshold
  - Gain threshold
- Match List I and List II

List I	List II
A. Pleuron	I. Trochantin
B. Tergum	II. Eusternum
C. Sternum	III. Postnotum
D. Legs	IV. Episternum

Choose the correct answer from the options given below:

  - A – I, B – II, C – III, D – IV
  - A – III, B – IV, C – I, D – II
  - A – II, B – I, C – III, D – IV
  - A – IV, B – III, C – II, D – I

10. Crank dusters are also called as \_\_\_\_\_
- Below dusters
  - Rotary dusters
  - Knapsack dusters
  - Power operated dusters
11. A blind-ending tube in the insect digestive system is \_\_\_\_\_
- Bursa copulatrix
  - Caecum
  - Rectum
  - Malpighian tubule
12. Emergence of lac insect is called as \_\_\_\_\_
- Migration
  - Eclosion
  - Moulting
  - Swarming
13. The particle size of dust formulation of pesticide is \_\_\_\_\_
- 50 micron
  - 50-75 micron
  - 75-100 micron
  - >100 micron
14. The insect species with narrow limits of tolerance with regard to habitat utilization are known as \_\_\_\_\_
- Euryecious
  - Stenoecious
  - Stenothermic
  - Eurythermic
15. The Non-Lepidopteran naturally occurring juvenile hormone is \_\_\_\_\_
- JH 0
  - JH I
  - JH II
  - JH III
16. Recent pest outbreak in Maize crop in India pertains to \_\_\_\_\_
- Helicoverpa zea*
  - Helicoverpa armigera*
  - Spodoptera litura*
  - Spodoptera frugiperda*
17. To increase the precision of results in the Randomized Block Design, error degree of freedom should be minimum of \_\_\_\_\_
- 6
  - 8
  - 12
  - 16
18. Scarred fruit damage in grapes is caused by
- Sthenias grisator*
  - Scirtothrips dorsalis*
  - Maconellicoccus hirsutus*
  - Othreis ancilla*
19. Match List I and List II
- | List I         | List II          |
|----------------|------------------|
| A. Maxilla     | I. Labrum        |
| B. Labium      | II. Superlinguae |
| C. Hypopharynx | III. Palpifer    |
| D. Epipharynx  | IV. Palpiger     |
- Choose the correct answer from the options given below:
- A-IV, B-III, C-I, D-II
  - A-III, B-IV, C-II, D-I
  - A-I, B-II, C-III, D-IV
  - A-II, B-I, C-IV, D-III
20. The ability of a parasitoid to manipulate the host's physiology is called \_\_\_\_\_
- Host regulation
  - Host preference
  - Host discrimination
  - Host acceptance

21. The process in which all unfertilized eggs develop into females is known as -

- a) Arrhenotoky
- b) Parthenotoky
- c) Aleurotoky
- d) Thelytoky

22. 'Isle of Wight' disease is also called as \_\_\_\_\_

- a) Nosema disease
- b) Amoebic disease
- c) Acarine disease
- d) Brood disease

23. A sclerotized plate surrounding an orifice around a spiracle is called as \_\_\_\_\_

- a) Atrium
- b) Peritreme
- c) Taenidia
- d) Tracheoles

24. Which of the following belong to Hemipteroid orders \_\_\_\_\_

- A. Siphunculata
- B. Thysanoptera
- C. Embioptera
- D. Strepsiptera
- E. Plecoptera

Choose the correct answer from the option below:

- a) A only
- b) B only
- c) A, B only
- d) C, D, E only

25. Specific environmental cues that induce diapause (or) elicit a specific behavioural response in insects are called \_\_\_\_\_

- a) Behaviour Modulators
- b) Attractant
- c) Elicitors
- d) Token stimuli

26. Which of the following form the lapping tongue proboscis in honey bee \_\_\_\_\_

- a) Mandibles and labrum
- b) Labium and maxilla
- c) Labrum and maxilla
- d) Labrum and labium

27. Trap crop that is used to control *Chilo partellus* on maize is \_\_\_\_\_

- a) Sorghum
- b) Pearl millet
- c) Sudan grass
- d) Cumbu napier grass

28. The first pathogen registered as microbial insecticide in 1948 with the United States Environmental Protection Agency was \_\_\_\_\_

- a) *Bacillus thuringiensis*
- b) *Bacillus popilliae*
- c) *Bacillus lentimorbus*
- d) *Streptomyces avermitilis*

29. Which of the following insects are endoparasites of other insects \_\_\_\_\_

- a) Siphonapterans
- b) Mecopterans
- c) Pthirapterans
- d) Strepsipterans

30. Match List I and List II

List I

List II

- A. *Sensilla trichodea* I. Peg\_\_\_\_\_like structure
- B. *Sensilla styliconica* II. Elongated, oval or circular plate of cuticle
- C. *Sensilla coeloconica* III. Hair\_\_\_\_\_like structure
- D. *Sensilla placodea* IV. Peg sunk below general cuticle surface

Choose the correct answer from the options given below:

- a) A\_\_\_\_ III, B\_\_\_\_ I, C\_\_\_\_ IV, D\_\_\_\_ II  
b) A\_\_\_\_ I, B\_\_\_\_ II, C\_\_\_\_ III, D\_\_\_\_ IV  
c) A\_\_\_\_ II, B\_\_\_\_ III, C\_\_\_\_ I, D\_\_\_\_ IV  
d) A\_\_\_\_ IV, B\_\_\_\_ III, C\_\_\_\_ II, D\_\_\_\_ I
31. A type of pupa with movable functional mandibles is called as \_\_\_\_  
a) Obtect  
b) Coarctate  
c) Exarate  
d) Dectious
32. The outer sheath of a striated muscle fibre is called as \_\_\_\_  
a) Stomodaeum  
b) Sarcolemma  
c) Tonofibrillae  
d) Mesenteron
33. In which of the following orders, the females exhibit strong parental care and nurse the eggs and nymphs \_\_\_\_  
a) Plecoptera  
b) Embioptera  
c) Grylloblattoidea  
d) Odonata
34. Indoxacarb blocks the activity of \_\_\_\_  
a) Potassium ion  
b) Acetyl choline receptor  
c) GABA  
d) Sodium ions
35. The cylindrical pouch of the body wall projecting ventrally from the sternal region of the first abdominal segment of Collembola is known as \_\_\_\_  
a) Styli  
b) Furcula  
c) Tenaculum  
d) Collophore
36. A species characterized by low reproductive rate and high survival rate is called \_\_\_\_  
a) B - strategist  
b) r - strategist  
c) k - strategist  
d) z - strategist
37. In which of the following insect's orders, Malpighian tubules are known to produce silk in the final larval stage \_\_\_\_  
a) Neuroptera  
b) Coleoptera  
c) Lepidoptera  
d) Isoptera
38. Pad like structure on the ventral surface of the tarsal sub segments is called \_\_\_\_  
a) Empodium  
b) Euplantulae  
c) Planta  
d) Basitarsus
39. Transmission of which of the following diseases in silk worm is transovarial \_\_\_\_  
a) Flacherie  
b) Grasserie  
c) Pebrine  
d) Muscardine
40. The first BPH resistant variety with Bph1 gene is \_\_\_\_  
a) IR 26  
b) IR 36  
c) IR 56  
d) IR 66

41. The most important external factor that can induce diapause in insects is \_\_\_\_\_

- a) Unfavourable nutrition
- b) Desiccation
- c) Photoperiod
- d) Temperature

42. Which of the following are the character(s) of pterygote insects \_\_\_\_\_

- A. Slight metamorphosis
- B. Several moulting after attaining sexual maturity
- C. Mandibles usually articulate with the head capsule at a single point
- D. Wings develop externally/internally
- E. Incomplete/complete metamorphosis

Choose the most appropriate answer from the options given below:

- a) A, B only
- b) C, D only
- c) D, E only
- d) D only

43. Match List I and List II

List I                      List II

- A. Protopod larvae    I. Eucephalous larvae
- B. Polypod larvae    II. Campodeiform larvae
- C. Oligopod larvae    III. Campodeiform larvae
- D. Eucephalous larvae    IV. Parasitic Hymenoptera

Choose the correct from the options given below:

- a) A\_\_\_\_\_IV, B\_\_\_\_\_III, C\_\_\_\_\_II, D\_\_\_\_\_I
- b) A\_\_\_\_\_I, B\_\_\_\_\_II, C\_\_\_\_\_III, D\_\_\_\_\_IV
- c) A\_\_\_\_\_III, B\_\_\_\_\_IV, C\_\_\_\_\_I, D\_\_\_\_\_II
- d) A\_\_\_\_\_I, B\_\_\_\_\_II, C\_\_\_\_\_IV, D\_\_\_\_\_III

44. A compound released by an organism which evokes a response beneficial to a member of another species but not to the emitter is known as \_\_\_\_\_

- a) Pheromone
- b) Kairomone
- c) Allomone
- d) Antimone

45. Johnston's organ is present in which of the following \_\_\_\_\_

- a) Scape
- b) Trochanter
- c) Coxa
- d) Pedicel

46. A single host is parasitised by more than one individual of the same species successfully, under laboratory condition. One such example is \_\_\_\_\_

- a) Trichogramma
- b) Cotesia
- c) Encarsia
- d) Telenomus

47. Cuticular outgrowth at the dorsum of the 9th segment in the larvae of Coleoptera is called as \_\_\_\_\_

- a) Urogomphi
- b) Uromeres
- c) Anal horn
- d) Pygopod

48. Type II peritrophic envelope is a characteristic feature of which of the following orders \_\_\_\_\_

- a) Coleoptera
- b) Orthoptera
- c) Isoptera
- d) Odonata



49. The coxa of insect leg attached to the body of the insect by an articular membrane is called \_\_\_\_\_

- a) Coxotrochanteral articulation
- b) Basicosta
- c) Coxal corium
- d) Coxal wall

50. The flexible lines of the integument between sclerites are called as \_\_\_\_\_

- a) Apodemes
- b) Sutures
- c) Conjunctivae
- d) Articulations

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**ICAR AICE JRF/SRF(PH.D.) – 2021**

**SUBJECT: AGRICULTURAL ENTOMOLOGY**

**SECTION: PART A – GENERAL KNOWLEDGE**

1. The digital computer operates on which of the following principle \_\_\_\_
  - a) Measurement
  - b) Calculation
  - c) Logical
  - d) Electrification
2. The non\_\_\_\_cooperation movement of Gandhiji was launched in which of the following year \_\_\_\_
  - a) 1915
  - b) 1922
  - c) 1920
  - d) 1930
3. The ministry is implementing MIDH (Mission for Integrated Development of Horticulture) with effect from which of the following year \_\_\_\_
  - a) 2012\_\_\_\_13
  - b) 2019\_\_\_\_20
  - c) 2015\_\_\_\_16
  - d) 2014\_\_\_\_15
4. Optical fibre used the concept of which of the following \_\_\_\_
  - a) Reflection
  - b) Refraction
  - c) Total internal reflection
  - d) Total internal refraction
5. What do you term the phenomenon whereby the specific gene is added to the plant for producing a desirable phenotype \_\_\_\_
  - a) Genetic manipulation
  - b) Genetic recombination
  - c) Genetic modification
  - d) Genetic hybridisation
6. Which of the following nutrient does not come under the ambit of 'macro\_\_\_\_nutrients' in Soil Health Card \_\_\_\_
  - a) Nitrogen
  - b) Zinc
  - c) Phosphorus
  - d) Potassium
7. Cole crops, root crops and legumes come under the ambit of which of the following \_\_\_\_
  - a) Olericulture
  - b) Pomology
  - c) Viticulture
  - d) Arboriculture
8. How do you term the form of agriculture, in which, industrialized production of crops and animal products takes place \_\_\_\_
  - a) Manufactured agriculture
  - b) Modern agriculture
  - c) Industrial agriculture
  - d) Mechanistic agriculture
9. Which of the following is the chemical name of vitamin B2 \_\_\_\_
  - a) Riboflavin
  - b) Calciferol
  - c) Pyridoxin
  - d) Niacin
10. What is the focus of the participatory plant breeding program \_\_\_\_
  - a) Scientists
  - b) Plants
  - c) Environment
  - d) Farmers

11. Yellow vein mosaic is the viral disease of which of the following plants \_\_\_\_\_

- a) Ladyfinger
- b) Papaya
- c) Sugarcane
- d) Banana

12. Which of the following is the device used to measure the power and speed of the wind \_\_\_\_\_

- a) Avometer
- b) Anemometer
- c) Airometer
- d) Aviontimeter

13. Which of the following systems has also incorporated social aspects in itself \_\_\_\_\_

- a) Landscaping
- b) Permaculture
- c) Horticulture
- d) Forest gardening

14. An Islamic revivalist movement named Wahabi movement was founded by which of the following person \_\_\_\_\_

- a) Sian Saheb
- b) Syed Ahmed
- c) Haji Shariat Allah
- d) Dadu Mian

15. Micro irrigation fund of Rs. 5,000 crores have been placed with which of the following organization \_\_\_\_\_

- a) NABARD
- b) IDBI
- c) SBI
- d) RRBs

16. Which of the following is considered as the "Magna Carta of England Education in India" \_\_\_\_\_

- a) Hunter education committee
- b) Lord Macaulay's Minute

c) Wood's Despatch

d) Thomas Babington Macaulay

17. The study of individual trees, shrubs, vines, and perennial woody plants is known as which of the following \_\_\_\_\_

- a) Turf management
- b) Arboriculture
- c) Pomology
- d) Viticulture

18. Which of the following organ(s) is/are affected by Mumps disease \_\_\_\_\_

- a) Entire body
- b) Skin
- c) Eye
- d) Parotid

19. The interaction of soils with living things, particularly plants are well known as which of the following \_\_\_\_\_

- a) Edaphology
- b) Paedology
- c) Soil zoology
- d) Paedogenesis

20. Which of the following is not the input unit of the computer \_\_\_\_\_

- a) Mouse
- b) Keyboard
- c) Screen
- d) Scanner

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**SECTION: PART B**  
**CORE CROP SCIENCE – II**

1. Match List I with List II

List I	List II
A. Bromadiolone	I. Contact and stomach poison
B. Sulphur	II. Contact and fumigant
C. Malathion	III. Contact poison
D. Dichlorvos	IV. Anticoagulant

Choose the correct answer from the options given below:

- a) A \_\_\_\_ II, B \_\_\_\_ III, C \_\_\_\_ I, D \_\_\_\_ IV
- b) A \_\_\_\_ III, B \_\_\_\_ I, C \_\_\_\_ IV, D \_\_\_\_ II
- c) A \_\_\_\_ IV, B \_\_\_\_ III, C \_\_\_\_ I, D \_\_\_\_ II
- d) A \_\_\_\_ III, B \_\_\_\_ IV, C \_\_\_\_ II, D \_\_\_\_ II

2. Which of the following is the breeding host for fruit sucking moth *Eudocima* spp. \_\_\_\_

- a) *Tinospora cordifolia*
- b) *Gynandropsis pentaphylla*
- c) *Ipomea* sp.
- d) *Triumfetta rhomboidea*

3. Non \_\_\_\_ edible oyster mushroom is \_\_\_\_

- a) *Pleurotus ostreatus*
- b) *Pleurotus citrinopileatus*
- c) *Pleurotus salmoneo*
- d) *Pleurotus olearius*

4. *Scutellonema bradys* is a pest of \_\_\_\_

- a) Potato
- b) Yam
- c) Cowpea
- d) Grapevine

5. The droplet size in aerosol spray is \_\_\_\_

- a) >500  $\mu$
- b) 300 \_\_\_\_ 500  $\mu$
- c) 100 \_\_\_\_ 300  $\mu$
- d) <60  $\mu$

6. Match List I with List II

List I	List II
A. Apothecium	I. A group of conidiophores cemented together
B. Cleistothecium	II. A closed ascocarp with a pore at top
C. Synnema	III. A completely closed ascocarp
D. Perithecium	IV. An open ascocarp

Choose the correct answer from the options given below:

- a) A \_\_\_\_ III, B \_\_\_\_ II, C \_\_\_\_ IV, D \_\_\_\_ I
- b) A \_\_\_\_ IV, B \_\_\_\_ III, C \_\_\_\_ I, D \_\_\_\_ II
- c) A \_\_\_\_ I, B \_\_\_\_ II, C \_\_\_\_ III, D \_\_\_\_ IV
- d) A \_\_\_\_ II, B \_\_\_\_ IV, C \_\_\_\_ III, D \_\_\_\_ I

7. The silkworm respire through \_\_\_\_

- a) Gills
- b) Air sacs
- c) Book lungs
- d) Tracheae

8. Given below are two statements:

Statement I: Candidatus phytoplasma is a wall \_\_\_\_ less prokaryote transmitted by leafhopper.

Statement II: Candidatus phytoplasma is highly sensitive to tetracycline antibiotic.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect

- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct
9. Given below are two statements:  
Statement I: Leaf streak disease of rice is caused by *Xanthomonas oryzae*.  
Statement II: Leaf streak disease is a vascular disease.
- In light of the above statements, Choose the most appropriate answer from the options given below:
- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct
10. Which vitamins are essentials to insects \_\_\_\_
- a) Vitamin A & E
- b) Vitamin B & D
- c) Vitamin A & C
- d) Vitamin C & D
11. Which caste of the termite causes damage to crops \_\_\_\_
- a) King
- b) Queen
- c) Worker
- d) Soldier

12. Given below are two statements:  
Statement I: *Rhabditis*, *Plectus* and *Wilsonema otophorum* are entomopathogenic.  
Statement II: *Steinernema* and *Heterorhabditis* are entomopathogenic.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct
13. First plant parasite nematode, *Anguina tritici* named *Vibrio tritici* by J.T. Needham in the year \_\_\_\_
- a) 1853
- b) 1743
- c) 1756
- d) 1734
14. Mulberry is largely pollinated by \_\_\_\_
- a) Honey bees
- b) Wind
- c) Birds
- d) Butterflies
15. Salicylic acid reacts with two major  $H_2O_2$  \_\_\_\_ scavenging plant enzymes
- A. Catalase
- B. Ascorbic peroxidase
- C. Aconitase
- D. Cellulase

Choose the correct answer from the options given below:

- a) A & C only
- b) A & B only
- c) B & D only
- d) A & D only

16. Given below are two statements:

Statement I: Mononchus, Dorylaimus and Actimolaimus are predatory soil inhibiting nematodes.

Statement II: Belonolaimus, Dolichodorus and Trichodorus are plant parasitic nematodes.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

17. Match List I with List II

List I	List II
A. Illeis cincta	I. Wheat rust
B. Brevenia rehi	II. Plant virus
C. IARI Regional Station, Pune	III. Stunted paddy in circular patches
D. IARI Regional Station, Wellington	IV. Mycophagous

Choose the correct answer from the options given below:

- a) A - III, B - II, C - IV, D - I
- b) A - IV, B - III, C - II, D - I
- c) A - I, B - II, C - III, D - IV
- d) A - II, B - IV, C - III, D - I

18. Aflatoxin in peanuts is caused by \_\_\_\_\_

- a) *Aspergillus niger*
- b) *Aspergillus fumigants*
- c) *Aspergillus flavus*
- d) *Aspergillus nidulans*

19. Match List I with List II

List I	List II
A. Tabtoxin	I. <i>Alternaria alternate</i>
B. Tentoxin	II. <i>Cochliobolus carbonum</i>
C. H C - Toxin	III. <i>Pseudomonas syringae</i>
D. P C - Toxin	IV. <i>Periconia circinta</i>

Choose the correct answer from the options given below:

- a) A - II, B - III, C - IV, D - I
- b) A - I, B - II, C - IV, D - III
- c) A - II, B - IV, C - I, D - I
- d) A - III, B - I, C - II, D - IV

20. Given below are two statements:

Statement I: The interval between the moulting is known as instar.

Statement II: The skins casted by the insect are known as exuviae.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

21. Calcified cocoons are the ones destroyed by \_\_\_\_\_

- a) Virus
- b) Bacteria
- c) Fungus
- d) Protozoa

22. Plants infected by *Meloidogyne incognita*, present above ground symptoms as

- A. Water and nutrient stress
- B. Hypertrophy and Hyperplasia
- C. Wilting and stunting
- D. Yellowing of plant

Choose the correct answer from the options given below:

- a) A, B and C only
- b) A, C and D only
- c) A, B and D only
- d) B, C and D only

23. Match List I with List II

- | List I  | List II |
|---|---------|
| A. Mites in cotton I. 1 - 2 nymphs/adults per leaf  |         |
| B. Thrips in cotton II. 10/cm per leaf              |         |
| C. Whitefly in cotton III. 5 - 10 per leaf          |         |
| D. Aphids in cotton IV. 15 - 20% of plants infested |         |

Choose the correct answer from the options given below:

- a) A - II, B - I, C - IV, D - III
- b) A - I, B - II, C - IV, D - III
- c) A - II, B - III, C - I, D - IV
- d) A - II, B - I, C - III, D - IV

24. For the first time, copper sulphate was used as wheat seed treatment to control \_\_\_\_\_

- a) Smut
- b) Bunt
- c) Yellow rot
- d) Rust

25. Which of the termite caste is fertile \_\_\_\_\_

- a) Presoldiers
- b) Alates
- c) Worker
- d) Soldiers

26. Match List I with List II

- | List I             | List II         |
|--------------------|-----------------|
| A. Ufra            | I. Heterodera   |
| B. Cyst            | II. Meloidogyne |
| C. Gall            | III. Dorylaimus |
| D. Soil inhabitant | IV. Ditylenchus |

Choose the correct answer from the options given below:

- a) A \_\_\_\_\_ IV, B \_\_\_\_\_ I, C \_\_\_\_\_ II, D \_\_\_\_\_ III
- b) A \_\_\_\_\_ IV, B \_\_\_\_\_ III, C \_\_\_\_\_ I, D \_\_\_\_\_ II
- c) A \_\_\_\_\_ I, B \_\_\_\_\_ II, C \_\_\_\_\_ III, D \_\_\_\_\_ IV
- d) A \_\_\_\_\_ II, B \_\_\_\_\_ IV, C \_\_\_\_\_ III, D \_\_\_\_\_ I

27. Glands that discharge their products directly into blood stream are called \_\_\_\_\_

- a) Endocrine
- b) Secretary
- c) Exocrine
- d) Salivary

28. The recommended quantity of FYM/compost for irrigated mulberry garden/ha/year is \_\_\_\_\_

- a) 40 MT
- b) 30 MT
- c) 20 MT
- d) 10 MT

29. Uzi fly belongs to the family \_\_\_\_\_

- a) Meloidae
- b) Tachinidae
- c) Saturnidae
- d) Pyralidae

30. Field coverage of soil injecting gun (2 lit cap) in case of nematicidal fumigant applications is \_\_\_\_

- a) 0.5 ha
- b) 1.0 ha
- c) 1.5 ha
- d) 2.0 ha

31. Given below are two statements:

Statement I: Crown gall disease of plant is caused by *Agrobacterium tumefaciens*.

Statement II: Ti-plasmid contains T-DNA where it integrates into the nuclear genome.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

32. Following the characterized by having ribbed bursa \_\_\_\_

- a) *Ditylenchus dispaci*
- b) *Helicotylenchus dihystrera*
- c) *Aphelenchus avenae*
- d) *Pratylenchus penetrans*

33. The hibernating eggs are preserved in \_\_\_\_

- a) Cold storage
- b) Oven
- c) Incubator
- d) Refrigerator

34. The term 'Pathovar' is used in the taxonomy of plant pathogens belonging to \_\_\_\_

- a) Mycoplasma
- b) fungi
- c) Nematodes
- d) Bacteria

35. Match List I with List II

List I                      List II

A. Orifice plate I. Prevents debris entering the orifice

B. Whirl plate II. Prevents leakage

C. Spacer III. Regulate the flow rate

D. Stainer IV. Rotates the fluid

Choose the correct answer from the options given below:

- a) A - II, B - III, C - I, D - IV
- b) A - III, B - I, C - IV, D - II
- c) A - IV, B - III, C - I, D - II
- d) A - III, B - IV, C - II, D - I

36. Given below are two statements:

Statement I: Gas released from aluminium phosphide depletes ozone layer

Statement II: Gas released from methyl bromide does not deplete ozone layer

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct



37. Triethanolamine formalin (TAF) is used as fixative to fix \_\_\_\_\_

- a) Nematodes
- b) Immature insects
- c) Mites
- d) Fish embryo

38. Covering of soil in between rows of mulberry with organic waste is known as \_\_\_\_\_

- a) Manuring
- b) Mulching
- c) Solarization
- d) Flooding

39. The enzyme involved in melanogenesis is \_\_\_\_\_

- a) Tyrosinase
- b) Proteinase
- c) Lipase
- d) Cellulase

40. *Heterodermavena* is an important pest of \_\_\_\_\_

- a) Maize and sorghum
- b) Pigeon pea and chickpea
- c) Wheat and barley
- d) Rice and ragi

41. Aphid transmitted non-persistent virus is:

- A. Afamovirus
- B. Nanovirus
- C. Fabavirus
- D. Potyvirus

Choose the correct answer from the options given below:

- a) A, C and D only
- b) A and D only
- c) A, B and C only
- d) A and B only

42. Fungal pathogen produces enzyme to degrade cuticular wax \_\_\_\_\_

- a) *Alternaria solani*
- b) *Colletotrichum capsici*
- c) *Puccinia hordei*
- d) *Albugo nidulans*

43. Which of the following is called obligate symbionts \_\_\_\_\_

- a) Commensalism
- b) Mutualism
- c) Proto co-operation
- d) Amensalism

44. Following is the most dominating agent of water hyacinth in India \_\_\_\_\_

- a) *Neochetina spp.*
- b) *Cyrtobagous salviniae*
- c) *Agasicles hygrophila*
- d) *Teleonemaia scrupulosa*

45. Nurse cells at feeding site are induced by \_\_\_\_\_

- a) *Tylenchulus semipenetrans*
- b) *Rotylenchus reniformis*
- c) *Heterodera avenae*
- d) *Pratylenchus subpenetrans*

46. Most effective method of irrigation involving less wastage of water in moriculture is \_\_\_\_\_

- a) Flood irrigation
- b) Drip irrigation
- c) Sprinkler irrigation
- d) Furrow irrigation

47. The cell wall composition of oomycetes fungi is \_\_\_\_\_

- a) Chitin
- b) Cellulose
- c) Glycogen
- d) Chitosan

48. Given below are two statements:

Statement I: Predatory soil nematodes act as a biocontrol agent against plant parasitic nematodes.

Statement II: *Pratylenchus* and *Radopholus* are ectoparasitic on plant roots.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

49. The scientific name of castor is \_\_\_\_\_

- a) *Morus alba*
- b) *Carica papaya*
- c) *Samia ricini*
- d) *Ricinus communis*

50. Powdery mildew in mulberry is caused by

- a) *Phyllactina corylea*
- b) *Meloidogynae incognita*
- c) *Acidium mori*
- d) *Cercospora moricola*

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**SECTION: PART C –  
AGRICULTURAL ENTOMOLOGY**

1. Many colour patterns derived and designed from the aesthetic value of \_\_\_\_
  - a) Butterflies
  - b) Jewel beetles
  - c) Jewel bugs
  - d) Chrysomelid beetles
2. Who suggested the term third generation pesticide to the hormonal control of insects \_\_\_\_
  - a) Slama (1971)
  - b) Williams (1967)
  - c) Riddiford (1970)
  - d) Stall (1971)
3. Which of the following is endodermal in origin \_\_\_\_
  - a) Fat body
  - b) Gonads
  - c) Midgut
  - d) Hemocytes
4. The agency to approve biological control agent in quarantine investigation on import is
  - a) NPPO
  - b) IPPO
  - c) CBD
  - d) CPB
5. Johnston's organ is present in which of the antennal segment of housefly \_\_\_\_
  - a) Scape
  - b) Pedicel
  - c) Flagellum
  - d) Flagellomere
6. Given below are two statements:  
Statement I: All locusts are grasshoppers.  
Statement II: But all grasshoppers are not locusts.  
In light of the above statements, Choose the most appropriate answer from the options given below:
  - a) Both Statement I and Statement II are correct
  - b) Both Statement I and Statement II are incorrect
  - c) Statement I is correct but Statement II is incorrect
  - d) Statement I is incorrect but Statement II is correct
7. Which of the following is an insect growth regulator (IGR) \_\_\_\_
  - a) Tebufenzide
  - b) Tolfenpyrad
  - c) Terbufos
  - d) Transfluthrin
8. Which of the following is eaten by certain people \_\_\_\_
  - a) Silk worm
  - b) Blister beetle
  - c) Silver fish
  - d) Cicada
9. The centre of the hemelytron of mirid bug wing is \_\_\_\_
  - a) Clavus
  - b) Cuneus
  - c) Corium
  - d) Embolium

10. Match List I with List II

List I

List II

- A. Arthropodin I. Tectocuticle  
B. Cement layer II. Zone beneath the wax layer  
C. Cuticulin III. Outer zone of procuticle  
D. Sclerotin IV. Water soluble protein

Choose the correct answer from the options given below:

- a) A \_\_\_\_ II, B \_\_\_\_ III, C \_\_\_\_ I, D \_\_\_\_ IV  
b) A \_\_\_\_ I, B \_\_\_\_ II, C \_\_\_\_ III, D \_\_\_\_ IV  
c) A \_\_\_\_ IV, B \_\_\_\_ I, C \_\_\_\_ II, D \_\_\_\_ III  
d) A \_\_\_\_ IV, B \_\_\_\_ III, C \_\_\_\_ II, D \_\_\_\_ I

11. An aluminium phosphide tablet (3g) in presence of humid air releases PH<sub>3</sub> to the tune of \_\_\_\_

- a) 3.0 g  
b) 2.0 g  
c) 1.0 g  
d) 0.3 g

12. The compound used to produce acetylene gas in the bird scarer equipment is \_\_\_\_

- a) Calcium hydroxide  
b) Calcium carbide  
c) Calcium carbonate  
d) Calcium chloride

13. *Drosicha mangiferae* lays egg sacs in/inside/underneath \_\_\_\_

- a) Inflorescence  
b) Curled leaves  
c) Soil  
d) Bark

14. Ladybird beetle, *Illeis cincta* feeds voraciously on \_\_\_\_

- a) Phytophagous mites  
b) Powdery mildew  
c) Nymphs of jassid  
d) Mealybug and scale

15. The taxonomy which is concerned with evolutionary relations and phylogeny is \_\_\_\_

- a) Alpha taxonomy  
b) Beta taxonomy  
c) Gamma taxonomy  
d) Delta taxonomy

16. Which insects are used as singing pets \_\_\_\_

- a) Crickets, Mole crickets and Grasshoppers  
b) Cicadas, Mole crickets and grasshoppers  
c) Cicadas, Crickets and Grasshoppers  
d) Mole crickets, Grasshoppers and Cicadas

17. The representative of chelicerata is \_\_\_\_

- a) Millipede  
b) Mite  
c) Centipede  
d) Lobster

18. The depth and width of the trench to be across the marching locust hopper is \_\_\_\_

- a) 15 x 15 cm  
b) 25 x 20 cm  
c) 45 x 30 cm  
d) 35 x 25 cm

19. How many generations of *Drosophila melanogaster* can be reared at 24±1°C \_\_\_\_

- a) 13  
b) 23  
c) 30  
d) 43

20. The suture separating the episternum and epimeron is \_\_\_\_

- a) Coronal suture  
b) Pleural suture  
c) Frontal suture  
d) Occipital suture

21. Trilobites were found in the period of \_\_\_\_\_

- a) Carboniferous
- b) Devonian
- c) Palaeozoic
- d) Silurian

22. Sigma ( $\Sigma$ ) is a symbol derived from \_\_\_\_\_

- a) Latin
- b) French
- c) Greek
- d) Spanish

23. Choose the correct statement(s) from the following:

- A. Gills are not found in hemimetabolan insects
- B. Hypermetamorphosis is found in lepidopterans
- C. Simple metamorphosis is known as paurometabola
- D. Polyembryonic development is also called polymetabola

Choose the correct answer from the options given below:

- a) A only
- b) B only
- c) A and B only
- d) C and D only

24. Match List I with List II

List I

List II

- A. *Patanga succincta* I. Garden locust
- B. *Locasta migratoria* II. Desert locust
- C. *Schistocera gregaria* III. Migratory locust
- D. *Acanthacris ruficornis* IV. Bombay locust

Choose the correct answer from the options given below:

- a) A - II, B - III, C - I, D - IV
- b) A - III, B - I, C - IV, D - II
- c) A - IV, B - I, C - II, D - III
- d) A - IV, B - III, C - II, D - I

25. Match List I with List II

List I

List II

- A. Orifice plate I. Prevents debris entering the orifice
- B. Whirl plate II. Prevents leakage
- C. Spacer III. Regulate the flow rate
- D. Stainer IV. Rotates the fluid

Choose the correct answer from the options given below:

- a) A - II, B - III, C - I, D - IV
- b) A - III, B - I, C - IV, D - II
- c) A - IV, B - III, C - I, D - II
- d) A - III, B - IV, C - II, D - I

26. Cotton and okra are efficiently pollinated by \_\_\_\_\_

- a) Carpenter bee
- b) Bumble bee (according to NTA answer key)
- c) Honey bee
- d) Leaf cutter bee

27. In which type of head, the mouthparts are in continuous series with the legs \_\_\_\_\_

- a) Hypognathous
- b) Agnathous
- c) Prognathous
- d) Opisthognathous

28. The selectivity ratio (SR value) for methoprene is \_\_\_\_\_

- a) 1 - 10
- b) 10 - 100
- c) 100 - 1000
- d) >1000

29. The insect diet with all known constituents by quantity is known as \_\_\_\_\_

- a) Oligidic diet
- b) Polygidic diet
- c) Meridic diet
- d) Holidic diet

30. Dolichasters are the abdominal protuberances of \_\_\_\_\_

- a) White grub
- b) Silver fish
- c) Naiads
- d) Antlion grubs

31. Match List I with List II

List I

List II

A. *Chilo infuscatellus* I. *Cephalonomia*

*stephanoderis*

B. *Ceratovacuna lanigera* II. *Hirsutella thompsoni*

C. *Aceria guerreronis* III. *Dipha aphidivora*

D. *Hypothenemus hampei* IV. Granulosis virus

Choose the correct answer from the options given below:

- a) A \_\_\_\_\_ II, B \_\_\_\_\_ III, C \_\_\_\_\_ I, D \_\_\_\_\_ IV
- b) A \_\_\_\_\_ III, B \_\_\_\_\_ I, C \_\_\_\_\_ IV, D \_\_\_\_\_ II
- c) A \_\_\_\_\_ IV, B \_\_\_\_\_ III, C \_\_\_\_\_ II, D \_\_\_\_\_ I
- d) A \_\_\_\_\_ III, B \_\_\_\_\_ IV, C \_\_\_\_\_ I, D \_\_\_\_\_ II

32. Given below are two statements:

Statement I: Whipscorpions and harvestmen belong to the class Arachnida.

Statement II: Pill bugs and Sow bugs belong to the class Crustacea.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

33. Which of the following is used in nutritional studies \_\_\_\_\_

- a) Ants
- b) Blow flies
- c) Cockroaches
- d) Dragon flies

34. When the values of all items of a series are arranged in increasing and decreasing order, it is usually called an array and the middle item of an array is called \_\_\_\_\_

- a) Mean
- b) Median
- c) Mode
- d) Coefficient of variation

35. What is the major reaction involved in Phase II metabolism of insecticides \_\_\_\_\_

- a) Oxidation
- b) Reduction
- c) Hydrolysis
- d) Conjugation

36. Given below are two statements:

Statement I: Collembola, crickets and cut worms are not considered as soil builders.

Statement II: By addition of insect saliva by the soil dwelling insects, the soil is enriched.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

37. Which of the following is house dust mite?

- a) Dermatophagoides farinae
- b) Dermanyssus gallinae
- c) Sarcoptes scabiei
- d) Knemidocoptes mutans

38. The weight of an adult giant African snail is

- a) 50 g (in most cases)
- b) 150 g
- c) 250 g (according to NTA answer key)
- d) 550 g

39. Given below are two statements:

Statement I: Methyl bromide is known to deplete ozone layer.

Statement II: Aluminium phosphide does not deplete ozone layer.

In light of the above statements, Choose the most appropriate answer from the options

given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

40. A population reaching a maximum equilibrium level is called as \_\_\_\_\_

- a) Lag phase
- b) Asymptote
- c) Logarithmic phase
- d) Positive acceleration phase

41. Incurviid moth pollinate \_\_\_\_\_

- a) Jack fruit
- b) Ficus
- c) Yucca
- d) Fig

42. Pallium is structure connected with \_\_\_\_\_

- a) Male genitalia of grasshopper
- b) Female genitalia of cockroach
- c) Dorsal genital aspect of moths
- d) Ventral genital aspects of beetles

43. Carcasses and necrophages belong to the family \_\_\_\_\_

- a) Tahcinidae
- b) Syrphidae
- c) Calliphoridae
- d) Asilidae

44. Match List I with List II

List I

List II

A. Simple parasite I. *Taeniogonalos gundlachii*  
(Trigonalidae)

B. Super parasite II. *Cotesia flavipes*  
(Braconidae)

C. Hyper parasite III. *Goniozus nephantidis*  
(Bethylidae)

D. Endoparasite IV. *Trichospilus pupivora*  
(Eulophidae)

Choose the correct answer from the options given below:

- a) A \_\_\_\_\_ II, B \_\_\_\_\_ III, C \_\_\_\_\_ I, D \_\_\_\_\_ IV
- b) A \_\_\_\_\_ III, B \_\_\_\_\_ IV, C \_\_\_\_\_ I, D \_\_\_\_\_ II
- c) A \_\_\_\_\_ IV, B \_\_\_\_\_ I, C \_\_\_\_\_ II, D \_\_\_\_\_ III
- d) A \_\_\_\_\_ IV, B \_\_\_\_\_ III, C \_\_\_\_\_ II, D \_\_\_\_\_ I

45. Which of the following is the breeding host for fruit sucking moth *Eudocima* spp \_\_\_\_\_

- a) *Tinospora cardifolia*
- b) *Gynandropsis pentaphylla*
- c) *Ipomea cairica*
- d) *Triumfetta rhomboidea*

46. Given below are two statements:

Statement I: *Laccifer lacca* sucks the phloem sap from succulent twigs.

Statement II: *Cajanus cajan* is another host of *Laccifer lacca*.

In light of the above statements, Choose the most appropriate answer from the options given below:

- a) Both Statement I and Statement II are correct
- b) Both Statement I and Statement II are incorrect
- c) Statement I is correct but Statement II is incorrect
- d) Statement I is incorrect but Statement II is correct

47. Match List I with List II

List I	List II
A. Intensive studies	I. Quadrat method
B. Absolute estimate	II. Insect products
C. Relative estimate	III. Life table
D. Population indices	IV. Use of traps

Choose the correct answer from the options given below:

- a) A - II, B - III, C - I, D - IV
- b) A - III, B - I, C - IV, D - II
- c) A - IV, B - I, C - II, D - III
- d) A - IV, B - III, C - II, D - I

48. The flies associated in corpse, useful in criminal investigation are \_\_\_\_\_

- a) Hover flies
- b) Fruit flies
- c) Robber flies
- d) Blow flies

49. The arachnid associated with corpses in forensic science is \_\_\_\_\_

- a) *Tetranychus* sp.
- b) *Eryophyes* spp.
- c) *Demodex* spp.
- d) *Otobius* sp.

50. Approximate number of eggs of *Corcyra cephalonica* in assc G are the weight of an adult giant African snail is \_\_\_\_\_

- a) 10,000
- b) 11,000
- c) 22,000
- d) 25,000

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## NET 2019

### AGRICULTURAL ENTOMOLOGY

1. Arthropods evolved during \_\_\_\_\_ period
  - a) Cambrian
  - b) Devonian
  - c) Triassic
  - d) Carboniferous
2. Acute poison used for rodent control is \_\_\_\_
  - a) Zinc phosphide
  - b) Barium carbonate
  - c) Both a and b
  - d) None of the above
3. Mustard saw fly egg laying on \_\_\_\_\_
  - a) leaf margins
  - b) fruit
  - c) seeds
  - d) bark
4. Multiple disease and insect resistant variety which is grown on more than 11 million ha in the world is \_\_\_\_\_
  - a) IR 26
  - b) IR 36
  - c) IR 56
  - d) IR 66
5. Green leaf hopper ETL in tungro virus endemic area is \_\_\_\_\_
  - a) 2/hill
  - b) 3/hill
  - c) 5/hill
  - d) 4/hill
6. Scientific name of lac is \_\_\_\_\_
  - a) *Keeria lacca*
  - b) *Laccifera lacca*
  - c) *Tachardia lacca*
  - d) All the above
7. Design is most appropriate for most laboratory experiments: CRD
8. In poison distribution: Mean = Variance
9. All the living organisms on the earth interacting with the physical environment as a whole is referred to as the: Biosphere
10. Insect known as 'Overflow worm': Cut worm
11. Indian grain storage institute established in: 1958
12. National Center for Integrated Pest Management established in: 1988
13. Homing behaviour seen in
14. Rearing of stingless bee known as: Meliponoculture
15. The All India Coordinated Research project on Biological control of pests and weeds (AICRPBC) was started in: 1977
16. Sprayer will cause more loss of spray droplets by drift: Ultra low volume sprayer
17. Example of Highvolume sprayer: Knapsack sprayer
18. Shear nozzle commonly used in: Knapsack sprayer
19. K strategist favours: Low reproductive rate and high survival rate
20. Reproduction type in Lac insect: Ovoviviparous
21. The quantity of liquid insecticide with 25% active ingredient required for preparing 500 litres of the spray fluid of 0.25% strength is: 5.0 litre

22. First commercial based formulation of NPV is: Elcar
23. Duplex setae present in: Tetranychidae
24. Litchi erineum mite belongs to family Eriophyidae
25. McPhil traps commonly used for: Dipteran flies
26. Silk tunnelling in storage due to:
- a) *Plodia interpunctella*
  - b) *Corycera cephalonica*
  - c) *Ephestia cautella*
  - d) *Sitophilus oryzae*
27. The highest lac producing state of India is:
- a) Chattisgarh
  - b) Madhya Pradesh
  - c) Bihar
  - d) Jharkhand
28. Other than Rice moth mass production of egg parasitoids is done with:
- a) Paddy moth
  - b) Potato tuber moth
  - c) Indian meal moth
  - d) None of the above
29. Dr. Hans R. Herren was awarded the world food prize in 1995 for his work on biological control of \_\_\_\_
- a) *Phenococcus manihoti*
  - b) *Paracoccus marginatus*
  - c) *Phenacoccus solenopsis*
  - d) *Maconellicoccus hirstus*
30. The Green lacewing is a predator of \_\_\_\_
- a) Whiteflies
  - b) Aphids
  - c) Mealybugs
  - d) All the above
31. Fungi *Verticillium lecanii* was used for control of \_\_\_\_
- a) Aphids
  - b) Leafhoppers
  - c) Mealy bugs
  - d) All the above
32. The sting in worker honey bee is a modified part of: Ovipositor
33. Term Biodiversity hotspots given by: Norman Myers
34. Examples of chitin synthesis inhibitors: Buprofezin, Lufenuron, Teflubenzuron
35. Father of Biological Nomenclature: Carlous Linnaeus
36. A term designating a specimen of opposite sex to the holotype is: Allotype
37. Wing coupling mechanism is present in Hymenoptera: Hamuli
38. Thrips have asymmetrical mouthparts due to absence of: Right mandible
39. IPM relies on:
- a) To reduce the plant protection bill
  - b) realistic IPM
  - c) to reduce the damage load and to optimise the yield
  - d) all the above
40. Extra intestinal digestion present in: Predators
41. In insects the resting potential of nerve axons about \_\_\_\_70mv
42. Neuro transmitters present in insects: Acetylcholine, L\_\_\_\_Glutamate, GABA
43. Cells which nurse the egg cells to grow: Trohocytes
44. Cantharidin\_\_\_\_An irritating substance producing family: Meloidae

45. Proctolin, a neuropeptide first isolated from
- Red cotton bug
  - Silkworm
  - Honeybee
  - Cockroach
46. The pest which attacks both in field and storage is: Pulse beetle
47. Pest population reappearance after some time some is called \_\_\_\_\_
- Pest outbreak
  - Pest resurgence
  - Secondary pest outbreak
  - Flare back
48. Beauvericin is chemically \_\_\_\_\_
- Crystal protein
  - Depsipeptide
  - Triterpinoid
  - None of the above
49. Diseases transmitted by mosquitoes \_\_\_\_\_
- Encephalitis
  - Filariasis
  - Yellow fever
  - All the above
50. Most quality lac strain obtained from: Kusumi strain
51. Lac composition like lac resin, waxes, dyes totally percentage of
- 55%
  - 65%
  - 75%
  - 95%
52. The silk filament is composed of two fibrion filaments held together by a cementing layer of: Sericin
53. Of the total silk produced in the country, 90% is produced from: Multivoltine
54. Disease is caused by bacteria in silkworm: Flacherie
55. Name of the species that is polyphagous, semi domesticated in nature: Muga silkworm
56. The main honey producing family: Apidae
57. Royal jelly is the secretion of: Lateral hypopharyngeal glands of worker
58. Vector of little leaf brinjal: Leaf hoppers
59. Red gram sterility mosaic virus is transmitted by: Mites
60. Sesame phyllody virus transmitted by: Jassids
61. Mycoplasma diseases transmitted by:
- Aphids
  - Leaf hoppers
  - Both a and b
  - None of the above
62. Which following component will help to transmission of virus \_\_\_\_\_
- Nucleic acid
  - Protein coat
  - Helper virus
  - Viriod
63. Which of the following one is most destructive mite in rice \_\_\_\_\_
- Oligonychus
  - Schizotetranychus
  - Stenotarsonamus
  - All the above

64. Mite is polyphagous, common to vegetable and ornamental crops: Polyphagous tarsonemus
65. Which of the following is not an acaricide?  
a) Kelthane  
b) Etoxazole  
c) Spiromesifen  
d) Acetamaprid
66. What is the percentage of drying of seeds/grains to get rid of stored pests: 10%
67. Sanjose scale is a pest of: Apple
68. In coconut root injection technique is used to for the management of: Black headed caterpillar
69. Pollu beetle is a major pest of: Pepper
70. "T" shaped marking on marble sized mango fruits is characteristic symptom of: Mango nut weevil
71. Gummosis and crown toppling in coconut is characteristic symptom of: Red palm weevil
72. Insect feeds on silk and developing cobs of maize: *Helicoverpa armigera*
73. Silver shoot in paddy is a characteristic symptom of: *Orseolia oryzae*
74. Increased silica developed content affects the mandibular development of :  
a) Rice stem borer  
b) Rice leaf folder  
c) Rice case worm  
d) All the above
75. Oryzanone associates with \_\_\_\_  
a) BPH  
b) Leaf folder  
c) Stemborer  
d) All the above
76. The energy is utilized for making fog, smoke and vapour sprays: Thermal energy
77. Pesticide are better applied to field crops: Either in the morning or the evening
78. Droplet spray is known as aerosol spray: 1 to 50 microns
79. Nozzle used for producing mist: Blast nozzle
80. Use resistant varieties in IPM example of: Cultural control
81. Which of the following is not a cultural practice for pest suppression \_\_\_\_  
a) Crop rotation  
b) Inter cropping  
c) Time of sowing  
d) Hand picking
82. Trimedlure is a lure for: *Ceratitis capitata*
83. Tool is used to measure the behaviour of insect towards the odour source: Wind tunnel
84. When the larvae moults into pupa the concentration of Juvenile hormone: Decreases
85. Maximum number of insect biotypes is observed in: Hessian fly
86. The occurrence of asparagine in minute quantities was considered to be the primary cause resistance to BPH in rice variety: Mudgo
87. The non-preference of plant resistance to insects is also known as: Antixenosis
88. Mode of action of Neonicotinoids: Nicotinic acetylcholine receptor agonists
89. An insecticide having LD<sub>50</sub>10000 (Single dose to rats) classified as  
a) Highly toxic  
b) Practically harmless  
c) Slightly toxic  
d) Somewhat toxic

90. Method most commonly used for determination of Bioassay:
- Schneider - Orelli
  - Abbott's formula
  - Finney method
  - Henderson - Tilton method
91. In sorghum, Inter-cropping with cowpea/pulses is the management practice for \_\_\_\_
- Shoot fly
  - Stem borer
  - Sorghum midge
  - Earhead bug
92. The pest, white grub lays eggs: singly in loose soil
93. In sugarcane earthing up is the management practice for: Early shoot borer
94. In sugarcane biological control, use of EPN's for:
- Ceratovacuna lanigera*
  - Scriphoga nivella*
  - Scriphophaga indicus*
  - Holotrichia serrate*
95. Webbing of leaves in groundnut is a characteristic symptom of Leafminer
96. Phytotoxemia causing insect Tea mosquito bug
97. Scientific name of Rust red flour beetle: *Tribolium castaneum*
98. Smallest storage damaging insect: *Cryptolestes minutus*
99. Karanjin, active principle present in a *Pongamia glabra* is: Furanoflavonol
100. Techniques used for males trapping and reducing the reproductive ability of female's: Male annihilation technique and mating disruption
101. The chemical which give advantage to receiver but not releaser: Kairomone
102. Physical nature of neonicotinoids: Soil application, Foliarspray and Seed treatment
103. Which of following insect lays eggs by slitting inside the ring on the stem:
- Trunk borer
  - Stem weevil
  - Stem borer
  - Stem gridler
104. Biotype which is most destructive in Indian sub-continent: Biotype 4
105. Order of insect used in forensic entomology: Diptera
106. The pathway related sap\_\_\_\_sucking insects: Signalling pathway
107. Schmidt sting pain index is a pain scale ranging between: 1 to 4
108. The *Apis mellifera* complete genome sequence was published in the year: 2006
109. Stipital region of labium is called: Palpiger
110. Best self moutage for silkworm is \_\_\_\_
- Chandrika
  - Nethrika
  - Rotary moutage
  - Plastic moutage
111. Pesticide Nano emulsion size range: >200nm

112. Effective predatory mite for controlling spider mites: *Persimilis*
113. Defence secretion of bombardian beetles is: Benzoquinones
114. Mustard sawfly have three pairs of thoracic legs and: 6 – 8 pairs of prolegs
115. Production of young ones by immature stages is: Paedogenesis
116. Cryptonephredial condition seen in
- Dipteran pests
  - Coleopteran pests
  - Lepidopteran pests
  - All the above
117. Dust formulations toxicant range: 0.1 to 25%
118. Example of Proinsecticide: Cartap
119. Fenoxycarb is a: Juvenile hormone analogue
120. Most important enzyme of MFOs system is: Cytochrome P-450
121. K.F. Knippling developed sterile male technique for the control of *Cochliomyia hominivorax* in Island of: Curacao
122. The optimum temperature range for the growth and development of insects: 10 to 35°C
123. Warm climate and High humidity favours the
- Insect growth
  - Mould growth
  - Increase respiration
  - All the above
124. The infective stage of Entomopathogenic nematodes: J3
125. Red flour beetle damage gives to off flavour to the produce due to: Gaseous quinones
126. Apple factor-Phlorizin is an antifeedant to
- Apple feeding aphids
  - Non apple feeding aphids
  - Both a and b
  - None of the above
127. Potato imparts resistance to *Myzus persicae*, Potato aphid due to
- Thick palisade tissue
  - Waxy layer
  - Density of hairs
  - Trichomes
128. Presence of which acid imparts resistance against pod borer, *Helicoverpa armigera* in chick pea: Malic acid
129. Best method to control maize fall armyworm
- Direct spraying to whorls
  - Soil drenching
  - Foliar spraying
  - Border row spraying
130. Which of the following most common mycotoxin (s) producing fungi:
- Aspergillus
  - Penicillium
  - Fusarium
  - All the above
131. Method used to analyse the dependent variable and a set independent variable \_\_\_\_\_
- Poisson regression
  - Multiple linear regression
  - Simple linear regression
  - Correlation
132. The efficacy of spray mostly depends on
- Mean level spray
  - Distribution of spray
  - Total spray solution
  - All the above

133. In which part predigestion of pollen will be take place in honeybees \_\_\_\_\_

- a) Crop
- b) Pharynx
- c) Oesophagous
- d) Ventriculus

134. Coffee berry borer belongs to family: Scolytidae

135. Incorporating two or more genes into a variety to impart resistance to more biotypes is called: Gene pyramiding

136. Cochineal insect produces a crimpson color dye is: Carminic acid

137. Lectins are what type of gene are isolated from one plant and cloned into another to produce transgenic plants: Protein

138. Bird scarce device releasing gas: Acetylene gas

139. Whitefly genus knows as vector of more number of viruses: *Bemisia tabaci*

140. Insect circulatory system is: blood flows freely all over the body

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## AARO ENTOMOLOGY 2016

- In which type of mouth parts, the mandibles are all together absent \_\_\_\_
  - chewing and Lapping type
  - Siphoning type
  - Sponging type
  - Piercing and sucking type
- Central Integrated Pest Management centre of Rajasthan is located at \_\_\_\_
  - Banswara
  - Sriganganagar
  - Bharatpur
  - Jodhpur
- Saddle shaped pronotum are found in the family of order Isoptera \_\_\_\_
  - Rhinotermitidae
  - Mastotermitidae
  - Termitidae
  - Hodotermitidae
- The percent area under Bt cotton to the total cropped area of cotton in India is \_\_\_\_
  - 42%
  - 64%
  - 76%
  - 94%
- In case of poisoning by organophosphate insecticides the antidote used is \_\_\_\_
  - Barbiturate
  - Phenobarbital
  - Diazepam
  - Atropine
- Indian institute of Ecology and Environment is located at \_\_\_\_
  - New Delhi
  - Patna
  - Lucknow
  - Kolkatta
- How much quantity of phorate 10 G is required when applied @ 2.5 kg a.i/ha for the control of soil pests \_\_\_\_
  - 10 kg
  - 15 kg
  - 20 kg
  - 25 kg
- In aerosol, the size of droplets is \_\_\_\_
  - < 1  $\mu\text{m}$
  - 1 - 5  $\mu\text{m}$
  - 50 - 100  $\mu\text{m}$
  - 100 - 300  $\mu\text{m}$
- Which one of the following insect pest causes damage to groundnut in storage \_\_\_\_
  - Rhyzopertha dominica*
  - Caryedon serratus*
  - Tribolium Castaneum*
  - Sitotroga cerealella*
- Congress grass *Parthenium hysterophorus* is effectively controlled by its natural enemy \_
  - Neochetina eichhorniae*
  - cyrtobagous Salviniae*
  - Orthogalumna terebrantis*
  - Zygogramma bicolorata*
- What would be concentration of fenvalerate 20 EC when applied @ 200 ml/ha dissolved in 1000 liters of water \_\_\_\_
  - 0.01%
  - 0.001%
  - 0.04%
  - 0.004%
- The number of cornea in the eyes of butterfly is \_\_\_\_
  - 400
  - 4000
  - 17000
  - 50000



13. The dose of NPV used for the control of fruit borer, *Helicoverpa armigera* in chick pea is
- 100 LE/ha
  - 250 LE/ha
  - 450 LE/ha
  - None of these
14. Trenching around the field is recommended for the control of the insect pests \_\_\_\_\_
- Red hairy caterpillar
  - Locust
  - Both Red hairy caterpillar and Locust
  - None of these
15. Who won the noble prize for his contribution in translating the language of honey bee communicated through waggle dance \_\_\_\_\_
- Ronald ross
  - C. F. Beason
  - Thomas
  - Karl von Frisch
16. *Encarsia formosa* is mainly used as bioagent for the control of the insect pests \_\_\_\_\_
- Mealy bug
  - Whitefly
  - Leaf Hopper
  - Thrips
17. The Maximum residue limit of dimethoate in fruits and vegetables in India is \_\_\_\_\_
- 0.2 PPM
  - 0.4 PPM
  - 2.0 PPM
  - 4.0 PPM
18. Which one of the following pairs is not correctly matched \_\_\_\_\_
- Yellow fever - *Glossina* sp.
  - Dengue - *Aedes aegypti*
  - Malaria - Female *Anopheles*
  - Kala Azar - *Phlebotomus* sp.
19. correct sequence of lac from harvesting to its preparation is
- Seed lac - stick lac - Dust lac - Shel lac
  - Stick lac - Seed lac - Dust lac - Shel lac
  - Seed lac - Dust lac - stick lac - shel lac
  - Dust lac - seed lac - shel lac - stick lac
20. "A text book of medical Entomology" is authored by \_\_\_\_\_
- E. P. Stebbing
  - M. L. Roonwal
  - Roy and Brown
  - Patton and craigg
21. Export of mango fruits from India to U.S.A. Has been banned due to the infestation of \_\_\_\_\_
- Amritodus atkinsoni*
  - Sternochetus mangiferae*
  - Apsylla cistella*
  - Batocera rufomaculate*
22. Which one of the following pairs is not correctly matched \_\_\_\_\_
- Carpet beetle - *Anthrenus vorax*
  - Bed bug - *Cimex hemipterus*
  - Cloth moth - *Oestrus ovis*
  - Horse fly - *Hippobosca capensis*
23. The type of reproduction found in cottony cushion scale, *Icerya purchasi* \_\_\_\_\_
- Paedogenesis
  - Polyembryony
  - Hermaphrotism
  - Viviparous

24. Which one of the following pairs is not correctly matched \_\_\_\_\_
- Life table - Southwood
  - Ecosystem - A. G. Tansley
  - Food chain - Elton
  - Economic Injury level - Smith
25. African sleeping sickness' is transmitted through \_\_\_\_\_
- Glossina palpalis*
  - Musca domestica*
  - Xynopsylla cheopis*
  - Phlebotomus argentipes*
26. The first documented case of resistance to insecticide was reported from the insect \_\_\_\_\_
- Singhara beetle, *Galerucella birmanica*
  - Sanjose scale, *Quadraspidiotus perniciosus*
  - Diamond back moth, *Plutella xylostella*
  - American boll worm, *Helicoverpa armigera*
27. Sugarcane wooly aphid, *Ceratovacuna lanigera* is effectively controlled in south India by its predator \_\_\_\_\_
- Depha aphidivora*
  - Adonia variegata*
  - cryptolaemus montrouzieri*
  - Coccinella Septum punctata*
28. The correct sequence of insect - pests of Sorghum on the basis of their appearance on crop from sowing to harvesting is \_\_\_\_\_
- Atherigona Soccata* - *chilo partellus* - *Stenadiplosis sorghicola*
  - Chilo partellus* - *Atherigona soccata* - *Stenadiplosis sorghicola*
  - Stenadiplosis sorghicola* - *chilo partellus* - *Atherigona soccata*
  - Stenadiplosis sorghicola* - *Atherigona soccata* - *chilo partellus*
29. Who is the plant protection advisor to Government of India \_\_\_\_\_
- Dr. V. Raghunathan
  - Dr. P. S. Chandurkar
  - Dr. S. N. Sushil
  - Dr. M. S. Randhawa
30. The scientific name of house rat is \_\_\_\_\_
- Bandicota bengalensis*
  - Rattus rattus*
  - Tatera indica*
  - Mus masculus*
31. The cotton crop was destroyed during kharif 2015 in India due to the severe attack of the pest.
- Leaf hopper
  - Thrips
  - Whitefly
  - Mealy bug
32. "National Bureau of Agricultural Insect Resources " is located at \_\_\_\_\_
- Ahmadabad
  - Guwahati
  - Bhopal
  - Bangaluru
33. The life cycle of mulberry silkworm, *Bombyx mori* completed in \_\_\_\_\_
- 20 - 25 days
  - 35 - 40 days
  - 45 - 50 days
  - 60 - 65 days
34. Formation of side shoots which give rise to a bunchy top is a symptom of damage by sugarcane insect \_\_\_\_\_
- Sugarcane root borer
  - Sugarcane shoot borer
  - Sugarcane top borer
  - Sugarcane internode borer

35. Hepatic caecae are originated from \_\_\_\_\_
- Ectoderm
  - Mesoderm
  - Endoderm
  - All of the these
36. Eriophyids mite have \_\_\_\_\_
- Two Nymphal stage
  - Three Nymphal stage
  - Four Nymphal stage
  - No Nymphal stage
37. Larval head is well developed in sub order of diptera \_\_\_\_\_
- Nematocera
  - Brachycera
  - Cyclorrhapha
  - Apocrita
38. The blood sugar 'Trehalose' is entirely lacking in insect \_\_\_\_\_
- Chalcophora mariana*
  - Bombax mori*
  - Anisolabis littoria*
  - Agria affinis*
39. Failure of muscular coordination due to pesticide poisoning is known as \_\_\_\_\_
- Anorexia
  - Ataxia
  - Bradycardia
  - Nausia
40. In which type of ecological pyramid, the shape is always upright \_\_\_\_\_
- Pyramids of numbers
  - Pyramids of biomass
  - Pyramids of energy
  - none of these
41. The inverted Y - shaped suture on the insect head is known as \_\_\_\_\_
- Fronto\_\_\_\_\_clypeal suture
  - Post \_\_\_\_\_occipital suture
  - Epicranial suture
  - None of these
42. Only the right mandible is functional in the insect order:
- Collembola
  - Protura
  - Coleoptera
  - Orthoptera
43. The cement layer of the epicuticle is formed by secretion of \_\_\_\_\_
- Dermal gland
  - Trichogen cells
  - Epidermal cells
  - None of these
44. Johnston's organ is located in \_\_\_\_\_
- Pedicel
  - Flagellum
  - Scape
  - None of these
45. The food channel in siphoning type of mouthpart is formed by \_\_\_\_\_
- Maxillary palpi
  - Hypopharynx
  - Modified galea
  - Labium
46. The males are winged and females wingless in \_\_\_\_\_
- Coccids
  - Embioptera
  - Strepsiptera
  - All of the these

47. The number of stylets in female mosquito is \_\_\_\_
- 2
  - 4
  - 6
  - 8
48. The insect larva which has no legs is termed \_\_\_\_
- Oligopod
  - Apodous
  - Scarabaeiform
  - Polupod
49. The main excretory product of insects is \_\_
- Urea
  - Uric acid
  - Ammonia
  - None of these
50. The sac for storage of sperms in male insects is called \_\_\_\_
- Seminal vesicle
  - Spermatheca
  - Genital chamber
  - Vas deferens
51. The light producing substance in glowworm fire fly is \_\_\_\_
- Luciferase
  - Luciferin
  - Lucithrin
  - None of these
52. The term "Species" was established and used for the first time by \_\_\_\_
- Imms
  - John Ray
  - Aristotle
  - Lamarck
53. The one factor common to all arthropods leading to their success is largely due to \_\_\_\_
- Small size
  - Chitinous exoskeleton
  - Joint footedness
  - None of these
54. Fore wings and hind wings are similar in \_\_
- Ephemeroptera
  - Hemiptera
  - Isoptera
  - Hymenoptera
55. Adephaga and Polyphaga are sub-order of
- Coleoptera
  - Hymenoptera
  - Orthoptera
  - Isoptera
56. when insects remain in a dormant stage due to temperatures lower than the optimum, they undergo \_\_\_\_
- Hibernation
  - Aestivation
  - Quiescence
  - None of these
57. specific strain of a species adapted to a particular set of environmental condition is termed \_\_\_\_\_
- Biotype
  - Ecotype
  - Allotype
  - Prototype
58. Which of the following is a reason for pest population outbreaks \_\_\_\_
- Absence of natural enemies
  - High natality
  - Reduced morality
  - All of the these

59. One of these mites is a well known predator of herbivorous spider mites \_\_\_\_
- Phytoseiulus persimilis*
  - Aculops Lycopersici*
  - Acarus silo*
  - Varroa jacobsoni*
60. The amount of energy transferred from one trophic level to another is approximately \_
- 90%
  - 10%
  - 50%
  - 100%
61. An insecticide used for seed treatment against sucking insect pests is \_\_\_\_
- Quinalphos
  - Decamethrin
  - Imidacloprid
  - Phorate
62. Mode of action of spinosad is that it \_\_\_\_
- Blocks nicotinic acetylcholine receptor
  - Effects GABA receptor causes both
  - Blocks nicotinic acetylcholine receptor & Effects GABA receptor
  - Some other mode of action
63. The first record of sericulture dates back to
- 4700 BC in China
  - 8000 BC in China
  - 2500 BC in India
  - 2500 BC in Sumeria
64. The insect capable of transmitting bacterial wilt (Stewart's disease) of cotton is:
- Myllocerus spp.*
  - Chaetocnema spp.*
  - Sphenoptera gossypii*
  - Empoasca devastans*
65. The concept of economic thresholds, economic levels and integrated control was introduced by \_\_\_\_
- V. M. Stern and R.F. Smith (1959)
  - V. M. Stern, R. F. Smith, R. van den Bosch and K. S. Hagen (1959)
  - R. F. Smith and R. Van den Bosch (1967)
  - V. M. Stern, R. F. Smith, R. van den Bosch and K. S. Hagen (1967)
66. The entomopathogenic nematode genera, *Steinernema* and *Heterorhabditis* are capable of killing insect larvae due to \_\_\_\_
- Nematode - Protozoa symbiosis
  - Nematode - fungus symbiosis
  - Nematode - Bacteria symbiosis
  - Nematode - Virus symbiosis
67. Vegetable oils mixed in small quantities with stored grain legumes are active against eggs and larvae and disable the female to oviposit. The pest in the context is \_\_\_\_
- Rhizopertha
  - Callosobruchus
  - Tribolium
  - Oryzaephilus
68. The mango nut weevil is a specific pest of mango variety \_\_\_\_
- Alphonso
  - Totapari
  - Neelum
  - Totapari & Neelum
69. The tea mosquito bug belongs to the insect family \_\_\_\_
- Pentatomidae
  - coreidae
  - Miridae
  - Tingidae

70. While using abbot's formula to compute the corrected per cent mortality, the mortality in the untreated control should not exceed \_\_\_\_\_
- 10 per cent
  - 20 per cent
  - 30 per cent
  - 50 per cent
71. The white stem borer (*Xylotrechus quadripes*) is the most important pest of \_\_\_\_\_
- Areca palm
  - Coconut
  - coffee
  - Tea
72. Timely planting of sorghum escapes the damage of \_\_\_\_\_
- Shoot borer
  - Armyworm
  - Shoot fly
  - Shoot bug
73. The Government of India passed the "Destructive Insects and Pests Act" in the year \_\_\_\_\_
- 1914
  - 1916
  - 1918
  - 1920
74. Which of the following bee species is most suitable for apiculture \_\_\_\_\_
- Apis cerana*
  - Apis mellifera*
  - Apis dorsata*
  - Apis florea*
75. *Aedes aegypti* is a vector of \_\_\_\_\_
- Elephantiasis
  - Filariasis
  - Yellow fever
  - Malaria
76. Boll-guard II cotton contains the genes \_\_\_\_\_
- Cry I Aa and Cry 2 Aa
  - Cry I Ac and Cry 2 Aa
  - Cry I Ac and Cry 2 Ab
  - Cry I Ad and Cry 2 Ab
77. Laboratory technique used to make multiple copies of a DNA segment is \_\_\_\_\_
- PCR
  - Electrophoresis
  - Recombinant DNA technology
  - None of these
78. when long axis of the head is vertical and the mouth parts ventral, such type of orientation is known as \_\_\_\_\_
- Hypognathous
  - Prognathous
  - Ophisthognathous
  - Clypeus
79. Insects have six functional legs but a family of Lepidoptera has only four functional legs, name the family \_\_\_\_\_
- Noctuidae
  - Nymphalidae
  - Pyralididae
  - Gelechiidae
80. Insect in which all the ten pairs of spiracles are open and functional is known as \_\_\_\_\_
- Apneustic
  - Holopneustic
  - Propneustic
  - Metapneustic
81. Principal pulsating organ which causes the flow of the blood in insect is known as \_\_\_\_\_
- Dorsal and Ventral diaphragms
  - Haemocytes
  - Dorsal vessel
  - Haemocoel

82. All muscles in Insects are composed of \_\_\_\_
- Viscera
  - Segmental
  - Appendage
  - Striated fibers
83. Process of transformation of spermatids into spermatozoa known as \_\_\_\_
- Spermatogonia
  - Spermatogenesis
  - Oogenesis
  - Spermatocyte
84. Study of the diversity and classification of organisms is known as \_\_\_\_
- Classification
  - Systematics
  - Taxonomy
  - Nomenclature
85. The growth of poikilothermic animals is arrested at 0° C and this temperature is called
- Favorable range
  - Lethal high range
  - Threshold of development
  - Lethal low range
86. The organophosphate insecticides were developed in which country during world war II as a substitute for nicotine \_\_\_\_
- Sweden
  - England
  - France
  - Germany
87. Selectivity can be divided into two groups (i) Ecological selectivity and which is second group \_\_\_\_
- Physiological selectivity
  - chemical selectivity
  - Biological selectivity
  - Physical selectivity
88. Government of India has passed which act by parliament to regulate the import, manufacture, sale, transport, distribution and use of insecticides \_\_\_\_
- Madras agriculture pests and disease Act of 1919
  - The Insecticide Act,1968
  - The U.S. Plant Quarantine Act,1912
  - East Punjab Agricultural pests, disease and Noxious weeds Act, 1949
89. Which one of the following statement is correct as regards mode of action of synthetic pyrethroids \_\_\_\_
- Inhibition of synaptic transmission by inhibiting the enzyme acetyl choline esterase
  - Stomach toxicant
  - Inhibition of electron transport in mitochondria
  - Inhibition of axonic transmission in the nervous system probably by blocking the  $Na^+$  gets in the open state
90. Insect growth regulators affect insects mainly by disturbing the normal activity of insect \_\_\_\_
- Endocrine systems
  - Exocrine systems
  - Excretory systems
  - digestive systems

91. Which fumigant should not be used for the fumigation of milled products, oil seeds and moist grains to avoid excessive absorption \_\_\_\_
- Aluminium phosphide
  - Ethylene dibromide ampoules
  - Ethylene dichloride
  - Ethylene dichloride/Carbon tetrachloride
92. An arthropod that parasitizes and kills an arthropod host; is parasitic in its immature stages but is free living as an adult is known as
- Parasite
  - Entomopathogen
  - Paedogenesis
  - Parasitoid
93. The plants attacked by pest in early stages produce ears devoid of grains and are known as the 'white ears' which pest cause such type of damage \_\_\_\_
- Nilparvate lugens*
  - Chilo partellus*
  - Scirpophaga incertulus*
  - Sesamia inferens*
94. Which crop can be used as a trap crop in cabbage to minimize the damage of Diamond back moth \_\_\_\_
- Marigold
  - Indian mustard
  - Okra
  - Maize
95. Newly hatched silkworm larva is technically known as \_\_\_\_
- Spinneret
  - Kengo
  - Disease free laying
  - Concoon
96. In rice successful transfer of Brown plant hopper and white backed plant hopper resistance genes has been done from which plant \_\_\_\_
- Oryza nivara*
  - Oryza officinalis*
  - Oryza sativa*
  - oxya nitidula*
97. The microbes, mostly fungi and sometimes bacteria, that grow entirely within the plant body, inter or intra cellular and spend all or nearly all their life cycle in the host are called
- Endophytes
  - Antibiotics
  - biotypes
  - Genetics
98. The insects are able to maintain the balance while walking due to \_\_\_\_
- Hexapod
  - Exoskeleton
  - Small size
  - Functional wing
99. Fossil records indicate that insects evolved during \_\_\_\_
- Cambrian period
  - Devonian period
  - Silurian period
  - Precambrian period
100. The common name of *Acridotheres tristis*
- House crow
  - House sparrow
  - Parrot
  - Myna

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## ARO ENTOMOLOGY 2016

1. The book 'Principles of Insect Morphology' was written by \_\_\_\_
  - a) R.F. Chapman
  - b) R.E. Snodgrass
  - c) V.B. Awasthi
  - d) R.C. Saxena
2. The hypopharynx separates the mouth opening from the \_\_\_\_
  - a) Cibarium
  - b) Labrum
  - c) Mandibles
  - d) Silvarium
3. Which structure could be found in both male and female \_\_\_\_
  - a) Valvifer
  - b) Aedeagus
  - c) Epiproct
  - d) Clasper
4. Which part of the leg lies between the femur and tarsus \_\_\_\_
  - a) Coxa
  - b) Arolium
  - c) Tibia
  - d) Trochanter
5. The First president of Entomological society of Indian was \_\_\_\_
  - a) H. S. Pruthi
  - b) Ramkrishan Ayyar
  - c) Afzal Hussain
  - d) Ramchandra Rao
6. Axillary sclerites form points of attachment for muscles that control the \_\_\_\_
  - a) Antennae
  - b) Wings
  - c) Legs
  - d) Mouth parts
7. The book "Introductory Insect Physiology" was written by \_\_\_\_
  - a) Sir V. B. Wigglesworth
  - b) R. L. Patton
  - c) Paul D. Bach
  - d) Y. J. A. Novak
8. Which of the following enters the Krebs's cycle \_\_\_\_
  - a) Malate Acetyl
  - b) Co A
  - c) Oxaloacetate
  - d) None of these
9. In which of the following insect the spiracle is absent?
  - a) Cecidomyid larvae
  - b) Chironomid larvae
  - c) Mycetophilid larvae
  - d) Pyscodid
10. Hexudecimal is a sex pheromon of \_\_\_\_
  - a) *Helicoverpa armigera*
  - b) *Spodoptera litura*
  - c) *Trichoplusia ni*
  - d) *Bombyx mori*
11. Insect haemolymph consists of following sinuses, Choose the odd one \_\_\_\_
  - a) Pericardial sinus
  - b) Perivisceral sinus
  - c) Peritracheal sinus
  - d) Perineural sinus
12. The origin of ovaries and testes of grasshopper is \_\_\_\_
  - a) Ectodermal
  - b) Endodermal
  - c) Mesodermal
  - d) None of these

13. The process by which air is brought into tracheal system and circulated throughout the body is known as \_\_\_\_
- a) Oxidation
  - b) Ventilation
  - c) Plastron respiration
  - d) Pneumatization
14. Which of the following is the smallest order of class insecta \_\_\_\_
- a) Hemiptera
  - b) Odonata
  - c) Lepidoptera
  - d) Zeroptera
15. In Hymenoptera the first abdominal segment, which is fused with the metathorax, is called \_\_\_\_
- a) Cornicle
  - b) Epiproct
  - c) Scutellum
  - d) Propodeum
16. The Zoological 'Validity of names' is dealt within \_\_\_\_
- a) Chapter VI
  - b) Chapter VII
  - c) Chapter VIII
  - d) Chapter IX
17. Ecotype is a type of species in which environmentally induced variation are \_\_\_\_
- a) Temporary
  - b) Genetically fixed
  - c) Genetically not related
  - d) None of these
18. Liebig's law or law of the minimum is a principle developed in agriculture science was described by \_\_\_\_
- a) Carl Linnaeus (1736)
  - b) J. C. Fabricius (1775)
  - c) Carl Sprengel (1828)
  - d) H. S. Lefroy (1908)
19. The term 'Ecosystem' was proposed by \_\_\_\_
- a) Hannis Reiter
  - b) A. G. Transley
  - c) E. P. Odum
  - d) Mayer
20. The fumigant Durafume is a mixture of EDB and methyl bromide in the ratio of \_\_\_\_
- a) 1:1
  - b) 2:1
  - c) 3:1
  - d) 3:2
21. A chemical beneficial to both releaser and receiver is called \_\_\_\_
- a) Kairomone
  - b) Allomone
  - c) Pheromone
  - d) Synomone
22. Nereistoxin is isolated from the body of marine annelids by \_\_\_\_
- a) Dr. Remobold (1983)
  - b) Dr. Nitta (1934)
  - c) Dr. Ruscoe (1972)
  - d) Dr. Williams (1956)

23. If one gram of a insecticide formulation containing 50% ingredient is mixed with 1 litre of water. What will be the ingredient in the spray fluid \_\_\_\_
- 5 ppm
  - 50 ppm
  - 500 ppm
  - 5000 ppm
24. The first edition of "Systema Naturae" was published in the year \_\_\_\_
- 1725
  - 1735
  - 1745
  - 1755
25. In general weedicides are sprayed by using
- Ring type spray nozzle
  - Disc type spray nozzle
  - Flat fan type spray nozzle
  - None of these
26. Eco<sub>2</sub> fume is a mixture of \_\_\_\_
- Phosphine and ethyl bromide
  - Phosphine and Carbon tetrachloride
  - Phosphine and Carbon disulphide
  - Phosphine and carbon oxide
27. The "Destructive Insect and Pest Act 1914" was passed on \_\_\_\_
- 3<sup>rd</sup> February
  - 3<sup>rd</sup> March
  - 3<sup>rd</sup> April
  - 3<sup>rd</sup> May
28. Sabadilla is a mixture of alkaloids \_\_\_\_
- Cevadine and Veratridine
  - Cevadine and Tephrosine
  - Deguelin and Veratridine
  - Toxicarol and Deguelin
29. Diflubenzuron is a derivative of \_\_\_\_
- Dithiophosphoric acid
  - Phosphoric acid
  - Difloro compound
  - Urea
30. Neonicotinoids act on the central nervous system of insects through binding of the \_\_\_\_
- Synaptic nicotinic acetyl choline receptor
  - Post Synaptic nicotinic acetyl choline receptor
  - Synaptic anticholinesterases
  - Synaptic acetyl choline
31. X-Ray method for detection of internal infestation of insect in grain was described by
- Dennis and Decker
  - Milner et al
  - White et al
  - Howe and Oxley
32. Bubonic plague is transmitted by which of the following insects \_\_\_\_
- Housefly
  - Fleas
  - Sandfly
  - Mosquito
33. The scientific name of case making cloth moth \_\_\_\_
- Tinea pellionella*
  - Trichophega tapetzella*
  - Galleria mellonella*
  - Tineola bisselliella*
34. The common name of *Macrosiphum rosaeiform* is \_\_\_\_
- Cotton aphid
  - Rose aphid
  - Jasmine thrips
  - Kachner Psylla

35. Which of following pests causes damage to the grains at milky stage in Rice \_\_\_\_\_
- Leptocorisa acuta*
  - Ripersia oryzae*
  - Dicladispa armigera*
  - Cofana spectra*
36. Leaf curl disease of litchi is caused by \_\_\_\_\_
- Tetranychid mite
  - Eriophid mite
  - Spider mite
  - Tenuipalpid mite
37. Onion thrips lay eggs \_\_\_\_\_
- Round shape
  - Kidney shape
  - Oval shape
  - Boat shape
38. Site of pupation of ber fruitfly \_\_\_\_\_
- on leaves
  - inside fruits
  - in soil
  - on stem
39. Mango stem borer belongs to family \_\_\_\_\_
- Papillionidae
  - Cerambycidae
  - Grecillaridae
  - Lyacaenidae
40. The scientific name of Indian Mole Rat \_\_\_\_\_
- Rattus rattus*
  - Bandicota bengalensis*
  - Bandicota indica*
  - Tatera indica*
41. The concept of 'Integrated pest management' was given by Geier and Clark in the year \_\_\_\_\_
- 1959
  - 1961
  - 1963
  - 1973
42. The basis of antibiosis in corn against European Corn borer is \_\_\_\_\_
- Nutritional deficiency
  - Nutritional imbalance
  - Presence of toxin
  - Presence of growth inhibitor MBOA and DIMBOA
43. The fertilized female of *Laccifer lacca* lay eggs ranging from \_\_\_\_\_
- 0 - 100
  - 101 - 200
  - 201 - 500
  - 501 - 700
44. Where the nector is converted into honey \_
- In the alimentary canal of queen
  - In the alimentary canal of worker
  - In royal chamber
  - In special cell of the hive
45. Spinosad is derived from \_\_\_\_\_
- Saccharopolyspara spinosa*
  - Polyspora spinosa*
  - Streptomyces avermitilis*
  - Streptomyces spinosa*
46. "Imms General Textbook of Entomology" 10<sup>th</sup> edition (1977) is authored by \_\_\_\_\_
- O. W. Richards and R. G. Davies
  - A. D. Imms and O. W. Richards
  - O. W. Richards and R. C. Davies
  - O. V. Richards and R. G. Davies

47. In leucerne, resistance to spotted aphid is associated with \_\_\_\_
- Low sinigrin in leaves
  - High silica contents in leaves
  - High saponin in leaves
  - None of these
48. Which of the following is a genetic vector \_
- Phasmid
  - Phage
  - Cosmid
  - All of these
49. Pallination by insect is called \_\_\_\_
- Entomophily
  - Entomophobia
  - Hydrophily
  - Entomophagy
50. Formation of mRNA from DNA is called \_\_\_\_
- Transformation
  - Transduction
  - Translation
  - Transcription
51. A nucleotide is formed of \_\_\_\_
- Purine, pyrimidin and phosphate
  - Purine, sugar and phosphate
  - Nitrogen base, sugar and phosphate
  - Pyrimidin, sugar and phosphate
52. Which part of the mouth parts of honey bee used to mould wax and adhere pollen \_\_\_\_
- Ligula
  - Labium
  - Labrum
  - Labellum
53. European Foulbrood disease of honey bee is caused due to \_\_\_\_
- Melissococcus plutonius*
  - Aspergillus flavus*
  - Galleria mellonella*
  - Nosema apis*
54. Disease of silk worm in which, the integument will be fragile and break easily oozing turbid milky fluid \_\_\_\_
- Flacherie
  - Grasserie
  - Muscardine
  - Pebrine
55. The gravid rat female live in \_\_\_\_
- Irregular burrow
  - Round burrow
  - Semi - circular burrow
  - None of these
56. The sexual maturity in immature stage of insect is known as \_\_\_\_
- Viviparity
  - Parthenogenesis
  - Paedogenesis
  - Polyembryony
57. Berlese's theory was proposed to explain the origin of \_\_\_\_
- Egg stage
  - Larval stage
  - Pupal stage
  - Adult stage

58. A universal antidote is a mixture of \_\_\_\_
- Activated charcoal (2 parts), magnesium oxide (1 part) and tannic
  - Activated charcoal (2 parts), magnesium oxide (2 part) and tannic
  - Activated charcoal (3 parts), magnesium oxide (2 part) and tannic
  - Activated charcoal (2 parts), magnesium oxide (1 part) and tannic
59. The first transformation with deltaendotoxin gene from BT was done in Belgium in the year 1985 in \_\_\_\_
- Tobacco
  - Paddy
  - Potato
  - Cotton
60. Which one is used for inoculation of host tree for \_\_\_\_
- Seed lac
  - Phunki lac
  - Brood lac
  - Eri lac
61. The process of post ecdysial hardening and darkening of the cuticle is regulated by \_\_\_\_
- Moulting hormone
  - Juvenile hormone
  - Brain hormone
  - Bursicon hormone
62. The "Nucleocapsid" is always associated with the structure of insect pathogenic \_\_\_\_
- Entomopox Viruses
  - Non - occluded viruses
  - Baculo viruses
  - Irido viruses
63. Which of the following is a first systemic organophosphate \_\_\_\_
- Quinalphos
  - Dimethoate
  - Phorate
  - Schradan
64. what will be the amount of malathion 50 EC required to prepare 100 liter of 0.05% spray material \_\_\_\_
- 100 ml
  - 500 ml
  - 1000 ml
  - 5000 ml
65. "Bhopal Gas Tragedy" was caused by which gas \_\_\_\_
- Phosphine
  - Methyl iso-cynate
  - Carbon tetrachloride
  - Chloromethane
66. Which one of the following pairs of diseases is viral as well as transmitted by mosquitoes \_\_\_\_
- Encephalitis and sleeping sickness
  - Yellow fever and sleeping sickness
  - Elephantiasis and Dengue
  - Yellow fever and Dengue
67. Which of these events occurs first during development of an insect egg \_\_\_\_
- Differentiation of germ layer
  - Enlargement of the germ band
  - Segregation of the germ cell
  - Migration of the cleavage nuclei

68. Which of the following is larval - pupal parasitoid \_\_\_\_\_

- a) *Compoletis chlorideae*
- b) *Apanteles Flavipes*
- c) *Trichogramma minutum*
- d) *Carcelia laxifrons*

69. The type of parthenogenesis where only males are produced is \_\_\_\_\_

- a) Amphitoky
- b) Thelytoky
- c) Arrhenotoky
- d) None of these

70. Pheromone released by female beetles of white grub is \_\_\_\_\_

- a) Hexane
- b) Benzene
- c) Methoxy benzene
- d) Ethoxy benzene

71. Widely distributed form of proprioceptors of chordotonal nature in insect is \_\_\_\_\_

- a) Scolopidia
- b) Campaniform sensilla
- c) Sensilla trichoidea
- d) Trichogen hair cell

72. The classic "mosaic theory" of insect vision was propounded by \_\_\_\_\_

- a) V. B. Wigglesworth (1965)
- b) Von Frisch (1967)
- c) R. L. Patton (1962)
- d) J. Muller (1826)

73. Grain - O - Cide is mixture of \_\_\_\_\_

- a) Carbon disulphide and carbon tetrachloride
- b) Phosphine and ethyl bromide P
- c) Phosphine and Carbon disulphide
- d) Phosphine and carbon oxide

74. Which of the given ancient Vedic period literature deals with identifying bees, mosquitoes and ants \_\_\_\_\_

- a) Atharva Veda
- b) Charaka (1200 BC)
- c) Manudharma sastra (1000 BC)
- d) None of these

75. The entomological work of Shushmita (100 - 200 AD) describes \_\_\_\_\_

- a) Distinction between locusts, grasshoppers and thrips
- b) Classification of ants, flies and mosquitoes
- c) Insect stings, classification of ants, flies and mosquitoes
- d) Usage of terms ovipary, vivipary and queen termite

76. Hind tibia with double row spines is a characteristic feature of the family \_\_\_\_\_

- a) Delphacidae
- b) Cicadellidae
- c) Membracidae
- d) Cercopidae

77. The rate of death and expectation of life at various time intervals during the life cycle of an insect are indicated by \_\_\_\_\_

- a) Insect population density
- b) Natality
- c) Life table
- d) Survivorship curve

78. The five principle parts of a standard sprayer nozzle in proper sequence are \_\_\_\_\_

- a) Cap>>Disc>>Whirl>>Washer>>Base
- b) Base>>Whirl>>Washer>>Disc>>Cap
- c) Base>>Washer>>Disc>>Whirl>>Cap
- d) Cap>>Washer>>Disc>>Whirl>>Base

79. The mango variety resistant to fruit fly, *Bactrocera dorsalis* Hendel is \_\_\_\_
- Alphonso
  - Kesar
  - Langra
  - None of these
80. Installing 10 - 12 blue/yellow sticky traps per hectare is effective to manage \_\_\_\_
- Grape thrips
  - Grape flea beetles
  - Pomegranate butterfly
  - Coconut tingid bug
81. In groundnut cultivation mass collection of adults of both sexes from host trees using pheromone in a 15 meter radius and pre - sprayed with an insecticide is effective against
- White grubs
  - Termites
  - Leaf miners
  - Tabacco caterpillar
82. Effective management of the silkworm endoparasitoid (uzi fly) is possible by \_\_\_\_
- Use of physical barrier like wiregauge net
  - Spray of benzoic acid (1%) to destroy eggs of uzi fly
  - Release of the ecto\_\_\_\_pupal gregarious parasitoid *Nesolynx thymus*
  - All of these
83. Shanon - Weiner function to estimate species diversity is given as \_\_\_\_
- $H' = \sum (p_i \log_e p_i)$
  - $H' = \sum (\log_e p_i)$
  - $H' = p_i \sum \log_e p_i$
  - None of these
84. Technology that uses enzymes to cut and paste together DNA sequences of interest \_\_\_\_
- Electrophoresis
  - Nanotechnology
  - Recombinant DNA technology
  - None of these
85. Which one of the following statement is correct \_\_\_\_
- The prethoracic gland are a pair of diffuse gland at the front of the head
  - The corpora cardiaca store and release hormones from neurosecretory cells
  - Ring gland surrounds the aorta just below the brain.
  - The corpora allata are situated at either side of the pharynx
86. Which reason is responsible for promise and the threat of ecology that thrust environmental problems into the fore front of man's thinking \_\_\_\_
- Atomic energy and Human population explosion
  - Chemical Industry and Air pollution
  - Soil pollution and Automobile Industry
  - Pesticides and Fertilizers
87. Who proposed the theory of "Genetic mechanism for the determination of number to regulate population" \_\_\_\_
- Pimentel theory (1961)
  - Milne's theory (1962)
  - Theory of Andrewartha and Birch (1954)
  - Nicholson's theory (1933)



88. The movement of insecticide towards the surface of the soil along with water is called \_\_\_

- a) Surface residue
- b) Disorption phenomenon
- c) Penetrated residue
- d) Wick - effect

89. Which of the following statement is correct

- a) Mutagenic agent: It has been established that insecticides are
- b) Half life: The rate of disappearance of insecticide deposited.
- c) Deposit: The amount of initially laid down insecticidal chemical on the object
- d) Residue: The amount of insecticide sprayed on the plant

90. which of the following insecticides group is not classified under classification based on mode of action \_\_\_\_\_

- a) Protoplasmic poisons
- b) contact poisons
- c) Respiratory poisons
- d) Nerve poisons

91. Phenyl pyrazoles are a new class of insecticides with a single material called as \_\_\_

- a) Imidacloprid
- b) Fipronil
- c) Pyridaben
- d) Profenofos

92. In rice storage, fungi are known to produce mycotoxins like aflatoxins by \_\_\_\_\_

- a) *Fusarium Moniliforme*
- b) *Beauveria bassiana*
- c) *Metarrhizium anisopliae*
- d) *Nomuraea rileyi*

93. Which one of the following statements is correct?

- a) If the environment and social costs of pesticide use are taken into account, the presence of pesticide residues is not affecting our exports of agriculture
- b) Modern agriculture can sustain the present productivity levels with the Production, storage, transport, distribution and application

94. Chemicals which act as a feeding deterrent and growth inhibitor in insect pest but influence the host searching efficiency of predators and parasitoids is called \_\_\_\_\_

- a) Biotypes
- b) Synemones
- c) Infochemicals
- d) Antimones

95. The technique in which high voltage current is applied in a pulsed manner which creates tiny holes in the plant cell membrane is called as \_\_\_\_\_

- a) Direct uptake of DNA
- b) Microinjection
- c) Microprojectile bombardment
- d) Electro poration

96. "International Institute of Biotechnology and Toxicology" is located at \_\_\_\_\_

- a) Hyderabad
- b) New Delhi
- c) Chennai
- d) Bengaluru

97. In insect DDT is metabolized into \_\_\_\_\_

- a) Di chlorobenzophenone
- b) Dichloro-diphenyl dichloro ethane
- c) Dichloro-diphenyl dichloro ethylene
- d) Dichloro-diphenyl acetic acid

98. The Grubs are legless in the family of order Coleoptera \_\_\_\_\_

- a) Chrysomelidae
- b) Coccinellidae
- c) Curculionidae
- d) Carabidae

99. The species of Trichogramma used against yellow stem borer, *Scirpophaga incertulus* in rice is \_\_\_\_\_

- a) *Trichogramma minutum*
- b) *Trichogramma chilonis*
- c) *Trichogramma japonicum*
- d) *Trichogramma brassilensis*

100. The correct sequence of host plant selection by insect is \_\_\_\_\_

- a) Host habitat finding - Host finding - Host recognition - Host acceptance
- b) Host acceptance - Host finding - Host habitat finding - Host recognition
- c) Host finding - Host habitat finding - Host acceptance - Host recognition
- d) None of these

\*\*\*\*\*

**ANSWER KEY**

**INSECTA PART A**

1- c	32. b	63. B	94. D	125. C	156. e
2- d	33. b	64. A	95. A	126. D	157. c
3- c	34. C	65. B	96. C	127. A	158. b
4- d	35. B	66. B	97. B	128. A	159. d
5- d	36. B	67. B	98. C	129. C	160. c
6- b	37. C	68. A	99. B	130. d	161. d
7- a	38. D	69. C	100. A	131. b	162. d
8- b	39. B	70. D	101. B	132. D	163. c
9- c	40. C	71. B	102. D	133. B	164. d
10- d	41. B	72. D	103. D	134. C	165. c
11- c	42. B	73. A	104. C	135. D	166. b
12- d	43. D	74. B	105. D	136. C	167. d
13- b	44. D	75. C	106. C	137. B	168. d
14- c	45. A	76. D	107. B	138. D	169. d
15- b	46. B	77. A	108. E	139. C	170. b
16- b	47. A	78. D	109. A	140. B	171. c
17- b	48. C	79. C	110. E	141. B	172. b
18- b	49. C	80. B	111. B	142. D	173. a
19- b	50. A	81. C	112. C	143. C	174. c
20- c	51. C	82. C	113. D	144. C	175. b
21- a	52. A	83. C	114. D	145. B	176. b
22- c	53. D	84. A	115. E	146. D	177. d
23- c	54. B	85. D	116. D	147. C	178. d
24- c	55. C	86. D	117. C	148. C	179. c
25- d	56. B	87. B	118. D	149. C	180. c
26- c	57. A	88. A	119. B	150. B	181. b
27- c	58. A	89. A	120. C	151. D	182. a
28- b	59. B	90. B	121. C	152. C	183. a
29- c	60. C	91. C	122. C	153. B	184. d
30- d	61. A	92. B	123. B	154. D	185. b
31- c	62. B	93. D	124. C	155. A	186. B

187. c	218. a	249. c	280. b
188. b	219. d	250. c	281. b
189. b	220. C	251. d	282. a
190. d	221. c	252. d	283. d
191. d	222. b	253. c	284. d
192. c	223. D	254. C	285. d
193. d	224. d	255. d	286. b
194. d	225. C	256. d	287. d
195. d	226. c	257. D	288. d
196. c	227. b	258. D	289. a
197. d	228. B	259. D	290. d
198. a	229. c	260. c	291. c
199. b	230. d	261. b	292. d
200. c	231. a	262. d	293. d
201. d	232. c	263. b	294. c
202. a	233. d	264. c	295. b
203. d	234. c	265. C	296. d
204. e	235. c	266. d	297. d
205. b	236. d	267. D	298. b
206. b	237. b	268. c	299. d
207. c	238. b	269. c	300. b
208. a	239. c	270. d	301. a
209. d	240. d	271. a	
210. c	241. b	272. a	
211. b	242. c	273. A	
212. c	243. d	274. b	
213. d	244. d	275. d	
214. c	245. c	276. b	
215. d	246. d	277. a	
216. b	247. d	278. A	
217. d	248. d	279. A	

**ANSWER KEY - INSECTA PART B**

1- b	32. d	63. c	94. d	125. b	156. d
2- d	33. d	64. d	95. c	126. b	157. c
3- d	34. d	65. c	96. d	127. d	158. c
4- b	35. d	66. d	97. c	128. c	159. d
5- c	36. c	67. d	98. d	129. b	160. c
6- b	37. c	68. c	99. b	130. b	161. c
7- c	38. c	69. b	100. a	131. d	162. d
8- c	39. d	70. b	101. d	132. d	163. a
9- b	40. b	71. b	102. b	133. d	164. a
10- b	41. d	72. c	103. c	134. c	165. d
11- d	42. c	73. c	104. b	135. d	166. d
12- b	43. c	74. a	105. b	136. d	167. d
13- a	44. d	75. d	106. c	137. a	168. d
14- d	45. b	76. d	107. d	138. b	169. a
15- c	46. b	77. d	108. d	139. b	170. b
16- c	47. d	78. d	109. d	140. c	171. d
17- a	48. b	79. b	110. b	141. b	172. d
18- d	49. d	80. d	111. d	142. c	173. d
19- c	50. d	81. c	112. c	143. e	174. d
20- d	51. d	82. c	113. a	144. c	175. d
21- d	52. c	83. d	114. b	145. d	176. a
22- c	53. d	84. d	115. d	146. d	177. d
23- c	54. a	85. a	116. c	147. a	178. c
24- b	55. d	86. b	117. c	148. a	179. d
25- b	56. b	87. c	118. d	149. c	180. a
26- c	57. c	88. b	119. d	150. a	181. d
27- a	58. b	89. c	120. c	151. d	182. d
28- c	59. b	90. d	121. c	152. d	183. b
29- d	60. b	91. a	122. d	153. d	184. a
30- b	61. b	92. b	123. d	154. b	185. d
31- b	62. b	93. d	124. b	155. c	186. b

187. c	218. b	249. b	280. c	311. c	342. c
188. a	219. c	250. b	281. d	312. d	
189. c	220. a	251. d	282. d	313. b	
190. c	221. d	252. c	283. b	314. c	
191. d	222. a	253. b	284. D	315. c	
192. b	223. c	254. b	285. d	316. b	
193. c	224. b	255. c	286. b	317. c	
194. a	225. c	256. d	287. c	318. c	
195. b	226. b	257. c	288. b	319. b	
196. c	227. c	258. a	289. d	320. b	
197. c	228. d	259. c	290. a	321. b	
198. b	229. b	260. c	291. d	322. c	
199. c	230. d	261. d	292. c	323. b	
200. c	231. d	262. b	293. b	324. d	
201. c	232. c	263. d	294. a	325. b	
202. b	233. c	264. d	295. d	326. c	
203. d	234. b	265. d	296. d	327. d	
204. c	235. b	266. a	297. c	328. c	
205. a	236. a	267. d	298. d	329. b	
206. c	237. d	268. a	299. c	330. a	
207. c	238. d	269. c	300. c	331. b	
208. b	239. d	270. b	301. b	332. d	
209. b	240. c	271. c	302. B	333. b	
210. d	241. b	272. a	303. b	334. d	
211. b	242. d	273. a	304. a	335. d	
212. b	243. d	274. c	305. a	336. a	
213. d	244. b	275. b	306. b	337. a	
214. a	245. a	276. c	307. b	338. d	
215. c	246. a	277. b	308. a	339. d	
216. c	247. d	278. c	309. c	340. b	
217. d	248. d	279. b	310. b	341. b	

## **NOTES**

## Objective Entomology: Basics at Tips

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(For all the competitive Examinations like ASRB NET, ICAR-JRF/SRF, BHU, JNU and other state exams AAO, AO, ARO, AARO)

### HIGHLIGHTS:

- More than 600 questions covering all the important points from the recommended Basic Books for Entomology.
- Previous Year Papers for the exams like NET, AO ARO etc. included.
- Recommended for the end moment short time revision.

### About Authors



Sheenam Bhateja is presently pursuing her Ph.D. (Ag. Entomology) from Rajasthan College of Agriculture, MPUAT, Udaipur. She did her schooling at Sacred Heart Convent School, Sri Ganganagar and went for graduation at Rani Lakshmi Bai Central Agricultural University, Jhansi. She has passed B.Sc. (Ag.) in first class distinction with a gold medal in 2019. Thereafter, she did her M.Sc. (Ag. Entomology) from Dr. YSPUHF, Solan and bagged Excellence in Academics Award during her M.Sc. Ag. During this period, she earned various scholarships and fellowships to support her education (ICAR NTS and Dhanuka Meritorious fellowship).



Sachin is presently pursuing his Ph.D. (Ag. Entomology) from Rajasthan Collage of Agriculture, MPUAT, Udaipur. He did his schooling at S.g.n Khalsa Sr. Sec. School, Sriganganagar and went for graduation at COA, Lalsot, SKN Agriculture University, jobner, Jaipur. He did his M.Sc. (Ag. Entomology) from SHUATS, Prayagraj and bagged Excellence in Academics Award during M.Sc. Ag.

