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TOPIC- ENTOMOLOGY

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1. Which insect order is characterized by having membranous wings with a dark pterostigma towards the costal apex and a labium modified into a mask in the naiad stage?

- A) Orthoptera
- B) Odonata
- C) Hemiptera
- D) Lepidoptera
- E) Coleoptera

Correct Answer: B) Odonata

2. The process of periodical shedding of the old cuticle in insects is known as _____.

- A) Apolysis
- B) Ecdysis
- C) Sclerotization
- D) Metamorphosis
- E) Tagmosis

Correct Answer: B) Ecdysis

3. Which of the following hormones is produced by the corpora allata and regulates metamorphosis by maintaining the insect in its immature stage?

- A) Eclosion hormone
- B) Moulting hormone
- C) Juvenile hormone
- D) Brain hormone
- E) Prothoracic hormone

Correct Answer: C) Juvenile hormone

4. In the context of insect circulatory systems, what is the term for the cavity where blood flows freely, irrigating various tissues and organs?

- A) Haemolymph
- B) Haemocoel
- C) Pericardial sinus
- D) Visceral sinus
- E) Perineural sinus

Correct Answer: B) Haemocoel

5. Which insect order is subdivided into Caelifera and Ensifera, with the former having shorter antennae and the latter having tympanal organs on the fore tibia?

- A) Dictyoptera
- B) Orthoptera
- C) Isoptera
- D) Thysanoptera
- E) Neuroptera

Correct Answer: B) Orthoptera

6. Match the following insect mouthpart types with their respective examples:

- I. Chewing and biting - A. Mosquito
- II. Piercing and sucking - B. Grasshopper
- III. Sponging - C. Housefly
- IV. Siphoning - D. Butterfly

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

E) I-B, II-C, III-A, IV-D

Correct Answer: A) I-B, II-A, III-C, IV-D

7. Which of the following is NOT a function of the insect integument?

A) Provides protection to internal organs

B) Facilitates gas exchange through spiracles

C) Gives shape and size to the insect

D) Conserves moisture to prevent desiccation

E) Contains pigments for attraction

Correct Answer: B) Facilitates gas exchange through spiracles

8. The insect head capsule is formed by the fusion of how many segments, and what are the two regions into which these segments are divided?

A) 6 segments; procephalon and gnathocephalon

B) 5 segments; antecephalon and postcephalon

C) 7 segments; procephalon and metacephalon

D) 6 segments; antecephalon and gnathocephalon

E) 5 segments; procephalon and metacephalon

Correct Answer: A) 6 segments; procephalon and gnathocephalon

9. Which scientist is referred to as the "Father of Insect Morphology" and authored the book "Principles of Insect Morphology"?

A) Carolus Linnaeus

B) J.C. Fabricius

C) Snodgrass R.E.

D) Maxwell Lefroy

E) Sir Vincent B. Wigglesworth

Correct Answer: C) Snodgrass R.E.

10. In insects, the tracheal system is responsible for which type of respiration, and how does it prevent water loss?

- A) Cutaneous; through wax layer
- B) Tracheal; through closable spiracles
- C) Gills; through atrial valve
- D) Book lungs; through pore canals
- E) Tracheal; through cement layer

Correct Answer: B) Tracheal; through closable spiracles

11. Which of the following is a characteristic feature of the order Hymenoptera?

- A) Forewings are leathery and called tegmina
- B) Abdomen is basally constricted with the first segment called propodeum
- C) Mouthparts are rasping and sucking
- D) Wings are fringed and cerci are absent
- E) Larvae are campodeiform

Correct Answer: B) Abdomen is basally constricted with the first segment called propodeum

12. The Malpighian tubules in insects are primarily involved in:

- A) Respiration
- B) Circulation
- C) Excretion and osmoregulation
- D) Sensory perception
- E) Reproduction

Correct Answer: C) Excretion and osmoregulation

13. Which type of insect antenna is characterized by a thread-like structure, as seen in grasshoppers?

- A) Setaceous

- B) Filiform
- C) Moniliform
- D) Pectinate
- E) Clavate

Correct Answer: B) Filiform

14. In the insect digestive system, what is the role of the proventriculus?

- A) Secretes digestive enzymes
- B) Filters liquid food
- C) Grinds and filters food particles
- D) Absorbs nutrients
- E) Stores food

Correct Answer: C) Grinds and filters food particles

15. Which of the following insect orders is characterized by a caste system with workers as the damaging caste?

- A) Odonata
- B) Isoptera
- C) Thysanoptera
- D) Neuroptera
- E) Diptera

Correct Answer: B) Isoptera

16. The phenomenon where insects store urea or uric acid in fat body cells without harmful effects is known as:

- A) Reflex bleeding
- B) Storage excretion
- C) Phagocytosis
- D) Encapsulation

E) Detoxification

Correct Answer: B) Storage excretion

17. Which of the following is a correct sequence in the moulting process of insects?

A) Sclerotization → Apolysis → Ecdysis

B) Apolysis → Ecdysis → Sclerotization

C) Ecdysis → Sclerotization → Apolysis

D) Apolysis → Sclerotization → Ecdysis

E) Sclerotization → Ecdysis → Apolysis

Correct Answer: B) Apolysis → Ecdysis → Sclerotization

18. Which of the following families belongs to the order Lepidoptera and is known for the pink bollworm?

A) Noctuidae

B) Gelechiidae

C) Pyralidae

D) Arctiidae

E) Sphingidae

Correct Answer: B) Gelechiidae

19. In the context of insect classification, which of the following is NOT a character of the phylum Arthropoda?

A) Segmented body

B) Renewable chitinous exoskeleton

C) Presence of cilia

D) Dorsal heart with ostia

E) Bilateral symmetry

Correct Answer: C) Presence of cilia

20. Which insect order has larvae called maggots that are apodous and acephalous?

- A) Coleoptera
- B) Diptera
- C) Hymenoptera
- D) Lepidoptera
- E) Neuroptera

Correct Answer: B) Diptera

21. The epicranial suture in an insect's head is also known as the _____ because it splits during ecdysis.

- A) Clypeolabral suture
- B) Ecdysial line
- C) Occipital suture
- D) Genal suture
- E) Antennal suture

Correct Answer: B) Ecdysial line

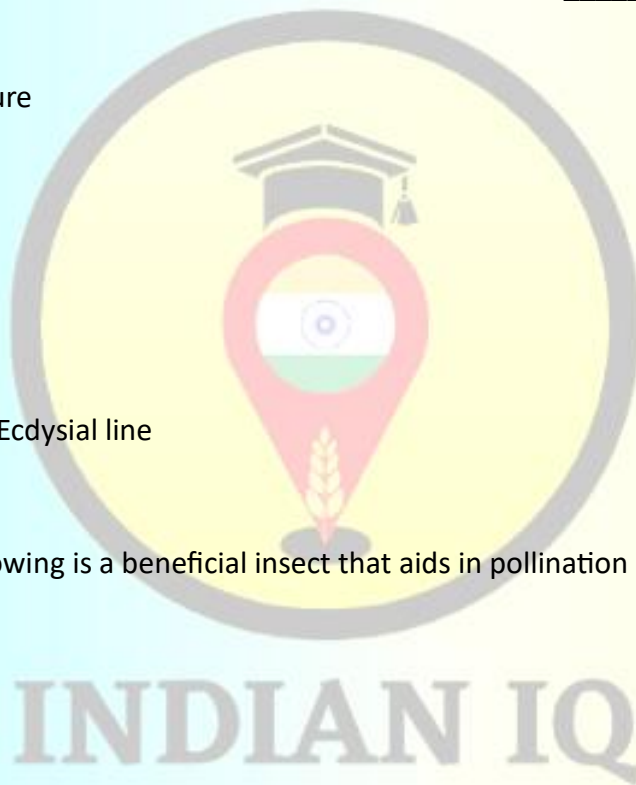
22. Which of the following is a beneficial insect that aids in pollination of crops like sunflower?

- A) Locust
- B) Honey bee
- C) Termite
- D) White grub
- E) Cockroach

Correct Answer: B) Honey bee

23. In the insect excretory system, what is the function of nephrocytes?

- A) Produce light energy
- B) Sieve high molecular weight chemicals



- C) Reabsorb water from the rectum
- D) Secrete moulting fluid
- E) Store calcium for puparium hardening

Correct Answer: B) Sieve high molecular weight chemicals

24. The respiratory system of insects is classified as holopneustic when:

- A) Only mesothoracic spiracles are functional
- B) All 10 pairs of spiracles are functional
- C) No spiracles are functional
- D) Only the last pair of abdominal spiracles is functional
- E) One or more pairs of spiracles are non-functional

Correct Answer: B) All 10 pairs of spiracles are functional

25. Which of the following is NOT a component of a typical insect leg?

- A) Coxa
- B) Trochanter
- C) Femur
- D) Scape
- E) Tibia

Correct Answer: D) Scape

26. In the insect reproductive system, the ovipositor in females is formed from which abdominal segments?

- A) 1st and 2nd
- B) 3rd and 4th
- C) 5th and 6th
- D) 8th and 9th
- E) 10th and 11th

Correct Answer: D) 8th and 9th

27. Which type of metamorphosis is characterized by the presence of a pupal stage and distinct larval and adult food sources, reducing competition?

- A) Ametabolous
- B) Hemimetabolous
- C) Holometabolous
- D) Hypermetabolous
- E) Paurometabolous

Correct Answer: C) Holometabolous

28. Which of the following insect orders is known for having a filter chamber in the alimentary canal to handle liquid food?

- A) Orthoptera
- B) Hemiptera
- C) Coleoptera
- D) Lepidoptera
- E) Diptera

Correct Answer: B) Hemiptera

29. The term "tagmosis" refers to:

- A) The process of moulting
- B) The grouping of body segments into regions
- C) The development of sensory organs
- D) The formation of the cuticle
- E) The classification of insects

Correct Answer: B) The grouping of body segments into regions

30. Which of the following is an example of a cuticular appendage in insects?

- A) Spines
- B) Microtrichia
- C) Setae
- D) Apodemes
- E) Apophyses

Correct Answer: C) Setae

31. In the context of insect sensory organs, what is the function of the Johnston's organ located in the pedicel of the antenna?

- A) Olfactory perception
- B) Gustatory perception
- C) Auditory perception
- D) Tactile perception
- E) Visual perception

Correct Answer: C) Auditory perception

32. Which insect order includes species that are polymorphic, social, and live in colonies with a caste system?

- A) Odonata
- B) Isoptera
- C) Thysanoptera
- D) Neuroptera
- E) Dictyoptera

Correct Answer: B) Isoptera

33. The insect circulatory system is described as open because:

- A) Blood is pumped through closed vessels
- B) Blood flows freely in the haemocoel
- C) Blood is confined to the dorsal vessel

D) Blood is absent in the visceral sinus

E) Blood is only present in the heart

Correct Answer: B) Blood flows freely in the haemocoel

34. Which of the following is a correct match between an insect order and its economic importance?

A) Orthoptera – Pollinators

B) Hymenoptera – Crop pests and beneficial pollinators

C) Diptera – Scavengers only

D) Coleoptera – Only stored product pests

E) Lepidoptera – Predators

Correct Answer: B) Hymenoptera – Crop pests and beneficial pollinators

35. The process of sclerotization in insects involves:

A) Dissolution of the old cuticle

B) Formation of new cuticle

C) Hardening of the new cuticle

D) Splitting of the ecdysial membrane

E) Secretion of moulting fluid

Correct Answer: C) Hardening of the new cuticle

36. Which of the following is NOT a character of the subclass Apterygota?

A) Primarily wingless

B) Metamorphosis is absent or slight

C) Mandibles articulate at a single point

D) Pleural sulcus in thorax is present

E) Pregenital abdominal appendages are absent

Correct Answer: D) Pleural sulcus in thorax is present

37. In the insect thorax, the sclerites of the tergum are called:

- A) Sternites
- B) Pleurites
- C) Tergites
- D) Epimeron
- E) Episternum

Correct Answer: C) Tergites

38. Which insect order is known for having forewings called hemielytra, with a thickened basal part and a membranous distal part?

- A) Hemiptera
- B) Orthoptera
- C) Coleoptera
- D) Lepidoptera
- E) Diptera

Correct Answer: A) Hemiptera

39. The term "cryptonephridial condition" in the insect excretory system refers to:

- A) Absence of Malpighian tubules
- B) Reattachment of Malpighian tubules to the rectum
- C) Storage of uric acid in fat body cells
- D) Excretion through the tracheal system
- E) Secretion of ammonia through labial glands

Correct Answer: B) Reattachment of Malpighian tubules to the rectum

40. The insect antenna consists of three parts. Which part is responsible for articulation with the head capsule?

- A) Pedicel

- B) Flagellum
- C) Scape
- D) Antennifer
- E) Johnston's organ

Correct Answer: C) Scape

41. Which of the following is an example of a sound-producing organ in insects?

- A) Tympanum
- B) Johnston's organ
- C) Ocelli
- D) Compound eyes
- E) Spiracles

Correct Answer: A) Tympanum

42. In the insect nervous system, what are the types of neurons involved in the conduction of nerve impulses?

- A) Sensory, motor, and association neurons
- B) Sensory, motor, and glial neurons
- C) Motor, association, and neurosecretory neurons
- D) Sensory, glial, and interneurons
- E) Association, neurosecretory, and glial neurons

Correct Answer: A) Sensory, motor, and association neurons

43. Which insect order is characterized by having a single pair of wings, with the hind wings reduced to halteres?

- A) Lepidoptera
- B) Diptera
- C) Hymenoptera
- D) Coleoptera

E) Orthoptera

Correct Answer: B) Diptera

44. The term “chaetotaxy” refers to:

A) The study of insect wing venation

B) The arrangement of setae on the insect body

C) The structure of the insect cuticle

D) The classification of insect orders

E) The development of sensory organs

Correct Answer: B) The arrangement of setae on the insect body

45. Which of the following is a pest of national importance in India due to its ability to form swarms and cause significant crop damage?

A) White grub

B) Termite

C) Locust

D) Aphid

E) Whitefly

Correct Answer: C) Locust

46. In the insect reproductive system, what is the role of the aedeagus in males?

A) Egg deposition

B) Sperm transfer during copulation

C) Sensory perception

D) Holding the female during copulation

E) Secretion of pheromones

Correct Answer: B) Sperm transfer during copulation

47. Which of the following is a correct statement about the insect cuticle?

- A) It is secreted by the basement membrane
- B) It consists of a single layer called the epicuticle
- C) It contains chitin and proteins like arthropodin and sclerotin
- D) It is primarily responsible for respiration
- E) It lacks pore canals

Correct Answer: C) It contains chitin and proteins like arthropodin and sclerotin

48. The order Thysanoptera is characterized by:

- A) Piercing and sucking mouthparts
- B) Rasping and sucking mouthparts
- C) Chewing and biting mouthparts
- D) Siphoning mouthparts
- E) Sponging mouthparts

Correct Answer: B) Rasping and sucking mouthparts

49. Which of the following is NOT a function of insect blood?

- A) Transport of nutrients
- B) Wound healing
- C) Gas exchange
- D) Encapsulation of parasites
- E) Detoxification

Correct Answer: C) Gas exchange

50. The term “holometabolous” refers to insects that:

- A) Lack wings throughout their life
- B) Undergo incomplete metamorphosis
- C) Have a pupal stage and complete metamorphosis

D) Have external wing development

E) Lack Malpighian tubules

Correct Answer: C) Have a pupal stage and complete metamorphosis

51. Which of the following institutes is concerned with biological control in India?

A) IOBC, Trinidad

B) ICIPE, Kenya

C) NBAIR, Bangalore

D) CABI, UK

E) IGSI, Hapur

Correct Answer: C) NBAIR, Bangalore

52. In the insect thorax, the pterothorax refers to:

A) Prothorax only

B) Mesothorax and metathorax

C) Prothorax and mesothorax

D) Metathorax only

E) All three thoracic segments

Correct Answer: B) Mesothorax and metathorax

53. Which type of insect reproduction involves the development of unfertilized eggs into males?

A) Oviparity

B) Viviparity

C) Parthenogenesis

D) Polyembryony

E) Paedogenesis

Correct Answer: C) Parthenogenesis

54. The insect head position where mouthparts are directed backward and held between the forelegs is called:

- A) Hypognathous
- B) Prognathous
- C) Opisthognathous
- D) Orthopteroid
- E) Coleopteroid

Correct Answer: C) Opisthognathous

55. Which of the following is a function of the insect hypopharynx?

- A) Grinding food particles
- B) Mixing saliva with food
- C) Piercing plant tissues
- D) Sucking liquid food
- E) Holding food during feeding

Correct Answer: B) Mixing saliva with food

56. In the insect excretory system, what is the role of the rectum?

- A) Secretes moulting fluid
- B) Reabsorbs water from feces
- C) Produces light energy
- D) Stores calcium
- E) Sieves high molecular weight chemicals

Correct Answer: B) Reabsorbs water from feces

57. Which of the following is a correct match of an insect order with its wing characteristics?

- A) Orthoptera – Membranous forewings
- B) Hemiptera – Hemielytra forewings

C) Diptera – Two pairs of membranous wings

D) Coleoptera – Membranous elytra

E) Lepidoptera – Leathery wings

Correct Answer: B) Hemiptera – Hemielytra forewings

58. The term “ecdysial line” is associated with which part of the insect?

A) Thorax

B) Abdomen

C) Head

D) Antenna

E) Wings

Correct Answer: C) Head

59. The term “haemocyte” refers to:

A) A type of sensory organ

B) A component of the insect cuticle

C) A type of blood cell in insects

D) A part of the tracheal system

E) A reproductive structure

Correct Answer: C) A type of blood cell in insects

60. Which of the following is a characteristic of the order Thysanoptera?

A) Complete metamorphosis

B) Fringed wings

C) Chewing mouthparts

D) Two pairs of equal wings

E) Prognathous head

Correct Answer: B) Fringed wings