

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF AGRICULTURE AND ENVIRONMENTAL SCIENCE
DEPARTMENT: NATURAL RESOURCES

COURSE CODE NR131/ AGC120 (1): INTRODUCTION TO ENTOMOLOGY AND
PARASITOLOGY

DURATION: 2 HOURS

TOTAL MARKS: 70

INSTRUCTIONS TO CANDIDATES

OCT 2024

Answer *Three* questions out of the following *Five* questions. You must answer question *One* from Section A and any *Two* questions from Section B.

SECTION A

1. a) The following are multiple choice questions on entomology. Candidates should select the correct answer. Each question carries **one** mark.
 - i) Which of the following statements is true about Entomology?
 - A. The study of Birds
 - B. The study of Insects
 - C. The study of Microbes
 - D. The study of Parasitic worms
 - ii) What are the three main body regions of an insect?
 - A. Head, Thorax, Abdomen
 - B. Head, Chest, Abdomen
 - C. Head, Thorax, Wing
 - D. Head, Thorax, Tail
 - iii) Which structure is primarily responsible for an insect's ability to taste?
 - A. Antennae
 - B. Compound eyes
 - C. Mandibles
 - D. Wings
 - iv) What type of metamorphosis do butterflies undergo?
 - A. Simple metamorphosis
 - B. Gradual metamorphosis
 - C. Complete metamorphosis

- D. None of the above
- v) Which of the following is NOT a characteristic of insects?
- A. Three pairs of legs
 - B. Exoskeleton
 - C. Internal skeleton
 - D. Compound eyes
- vi) Which order do bees belong to?
- A. Lepidoptera
 - B. Hymenoptera
 - C. Diptera
 - D. Coleoptera
- vii) What do you call the process of shedding an exoskeleton?
- A. Metamorphosis
 - B. Ecdysis
 - C. Moulting
 - D. Fecundation
- viii) Insects have _____ pairs of legs and _____ primary body regions, respectively.
- A. 6,2
 - B. 3,2
 - C. 4,2
 - D. 3,3
- ix) Insects, which feed on one type of food, are called _____.
- A. Polyphagous
 - B. Monophagous
 - C. Entomophagy
 - D. None of the above
- x) Which part of the insect's body is primarily involved in digestion?
- A. Head
 - B. Thorax
 - C. Abdomen
 - D. Antennae
- xi) Which of the following arthropods is not an insect?
- A. Tick
 - B. Fly
 - C. Cockroach
 - D. Dragonfly

- xii) Which of the following insects is known for its role in pollination?
 - A. Mosquito
 - B. Ant
 - C. Butterfly
 - D. Cockroach
 - xiii) Insects communicate using which of the following methods?
 - A. Sound
 - B. Chemical signals
 - C. Visual signals
 - D. All of the above
 - xiv) The following did not make insects more successful than other organisms.
 - A. Ability to fly
 - B. Variety of food sources
 - C. Diverse habitats
 - D. High metabolism
 - xv) What is the term for insects that live in colonies?
 - A. Solitary insects
 - B. Social insects
 - C. Parasitic insects
 - D. Predatory insects
- b. The following are multiple choice questions on parasitology. Each question carries **one mark**.
- i) Which type of parasitic relationship involves one organism benefiting while the other is neither helped nor harmed?
 - A. Commensalism
 - B. Mutualism
 - C. Parasitism
 - D. Predation
 - ii) The term ectoparasites includes
 - A. Some viruses
 - B. Some bacteria
 - C. Some protozoa
 - D. Some insects
 - iii) Which of the following is not a parasite?

- A. Facultative
 - B. Facilitative
 - C. Ectozoa
 - D. Accidental
- iv) Definitive, intermediate, reservoir, natural and accidental are types of hosts.
- A. True
 - B. False
 - C. Accidental is not a host
 - D. Reservoir is not a host
- v) You need a light microscope to see
- A. Bacteria
 - B. Viruses
 - C. Worms
 - D. Prions
- vi) What is the common name for the disease caused by *Trypanosoma brucei*?
- A. Chagas disease
 - B. Sleeping sickness
 - C. Leishmaniasis
 - D. Malaria
- vii) Trematoda and Nematoda are Platyhelminths.
- A. True
 - B. Only Trematoda is
 - C. Only Nematoda is
 - D. No, Nematoda is a Nematyhelminth
- viii) Parenchymatous degeneration, fatty degeneration and _____ are cell damages.
- A. Necrosis
 - B. Collenchymatous degeneration
 - C. Sugar degeneration
 - D. Protein degeneration
- ix) _____ is an accelerated rate of cell division resulting from an increased level of cell metabolism.
- A. Metaplasia
 - B. Neoplasia

- C. Hyperplasia
- D. Hypertrophy

- x) _____ is the growth of cells in a tissue to form a new structure
 - A. Metaplasia
 - B. B. Neoplasia
 - C. C. Hyperplasia
 - D. D. Hypertrophy
- xi) _____ describes the changing of one type of tissue into another without the intervention of embryonic tissue.
 - A. Metaplasia
 - B. Neoplasia
 - C. Hyperplasia
 - D. Hypertrophy
- xii) Which parasite is known for causing Chagas disease?
 - A. Plasmodium
 - B. Trypanosoma cruzi
 - C. Leishmania
 - D. Schistosoma
- xiii) Which of the following is NOT a type of helminth?
 - A. Roundworm
 - B. Flatworm
 - C. Thorny-headed worm
 - D. Giardia
- xiv) What is the lifecycle stage of a parasite that develops inside a vector?
 - A. Adult
 - B. Intermediate host
 - C. Definitive host
 - D. Larva
- xv) What is the primary goal of vector control programs?
 - A. To eliminate all parasites
 - B. To reduce the population of vectors that transmit diseases
 - C. To educate the public about parasites
 - D. To develop new treatments

SECTION B

2. Describe the general characteristics of the following insect orders:
- | | |
|---------------|-----------|
| a) Coleoptera | [5 Marks] |
| b) Hemiptera | [5 Marks] |
| c) Diptera | [5 Marks] |
| d) Isoptera | [5 Marks] |
3. With the aid of diagrams, explain the male and female reproductive systems of an insect. [20 Marks]
4. Define symbiosis and describe its various forms, providing examples for each type. [20 Marks]
5. Describe the various types of host-parasite relationships and discuss how these interactions influence the biology and behavior of both organisms. [20 Marks]

END OF PAPER