

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

NOV 2023

INSTRUCTIONS TO CANDIDATES

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) Which of the following are the main characteristic features of an Insect?
 - A. Pair of antennae
 - B. Three pairs of legs
 - C. Pair of wings
 - D. All of the above
 - iii) Which of the following is called the resting and inactive stage in the insect life cycle?
 - A. The Egg stage
 - B. The Larva stage
 - C. The pupa stage
 - D. The Adult stage

- iv) Insects have _____ pairs of legs and _____ primary body regions, respectively.
- A. 6,2
 - B. 3,2
 - C. 4,2
 - D. 3,3
- v) Insects, which feed on one type of food, are called _____.
- A. Polyphagous
 - B. Monophagous
 - C. Entomophagy
 - D. None of the above
- vi) Which of the following arthropods is not an insect?
- A. Scorpion
 - B. Fly
 - C. Cockroach
 - D. Dragonfly
- vii) Insects are classified into the phylum _____.
- A. Nematoda
 - B. Mollusca
 - C. Arthropoda
 - D. Platyhelminthes
- viii) 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
- ix) Which of the following statements is true about the holometabolous insects?
- A. These insects undergo complete metamorphosis
 - B. These insects undergo incomplete metamorphosis
 - C. Both A and B
 - D. None of the above

- x) Sucking mouthparts are not found in:
- A. Fleas
 - B. Lice
 - C. Flies
 - D. Ants
- xi) Chewing mouthparts never occur in_____
- A. Fleas
 - B. Earwigs
 - C. Beetles
 - D. Bees
- xii) The order Hemiptera contains_____
- A. Bed bugs and stink bugs
 - B. Chewing and sucking lice
 - C. Roaches and mantids
 - D. Crickets and grasshoppers
- xiii) The order Orthoptera contains_____
- A. Bed bugs and stink bugs
 - B. Chewing and sucking lice
 - C. Roaches and mantids
 - D. Crickets and grasshoppers
- xiv) What order of insects usually have their wings covered in flattened setae or scales?
- A. Coleoptera
 - B. Lepidoptera
 - C. Diptera
 - D. Hemiptera
- xv) The majority of honey bees in a colony are females and called _____.
- A. Alates
 - B. Workers
 - C. Queens
 - D. Drones

b. The following are multiple choice questions on parasitology. Each question carries **one mark**.

- i) The study of parasites is known as
 - A. Virology
 - B. Parasitology
 - C. Bacteriology
 - D. Biology
- ii) Which of the following is not a form of symbiosis?
 - A. Facultative
 - B. Commensalism
 - C. Parasitism
 - D. Gigantism
- iii) The term ectoparasites includes
 - A. Some viruses
 - B. Some bacteria
 - C. Some protozoa
 - D. Some insects
- iv) Which of the following is not a parasite?
 - A. Facultative
 - B. Facilitative
 - C. Ectozoa
 - D. Accidental
- v) Immunity
 - A. Helps viruses survive
 - B. Can be effective against bacteria
 - C. Always eliminates worms
 - D. Is responsible for wound healing
- vi) 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

- vii) You need a light microscope to see
- A. Bacteria
 - B. Viruses
 - C. Worms
 - D. Prions
- viii) Protozoa, helminths and arthropods are not classifications of parasites.
- A. True
 - B. False
 - C. Only helminths are not
 - D. Only arthropods are not.
- ix) Presence of the parasite on the surface of the body is known as:
- A. Infestation
 - B. Infection
 - C. Pollution
 - D. Contamination
- x) The following statement is false
- A. Sarcomastigophora is a protozoan
 - B. Apicomplexa is not a protozoan
 - C. Ciliophora is a protozoan
 - D. Teleospora is a protozoan
- xi) Trematoda and Nematoda are Platyhelminths.
- A. True
 - B. Only Trematoda is
 - C. Only Nematoda is
 - D. No, Nematoda is a Nematyhelminth
- xii) Parenchymatous degeneration, fatty degeneration and _____ are cell damages.
- A. Necrosis
 - B. Collenchymatous degeneration
 - C. Sugar degeneration
 - D. Protein degeneration
- xiii) _____ is an accelerated rate of cell division resulting from an increased level of cell metabolism.
- A. Metaplasia
 - B. Neoplasia
 - C. Hyperplasia
 - D. Hypertrophy

xiv) _____ is the growth of cells in a tissue to form a new structure

- A. Metaplasia
- B. B. Neoplasia
- C. C. Hyperplasia
- D. D. Hypertrophy
- E.

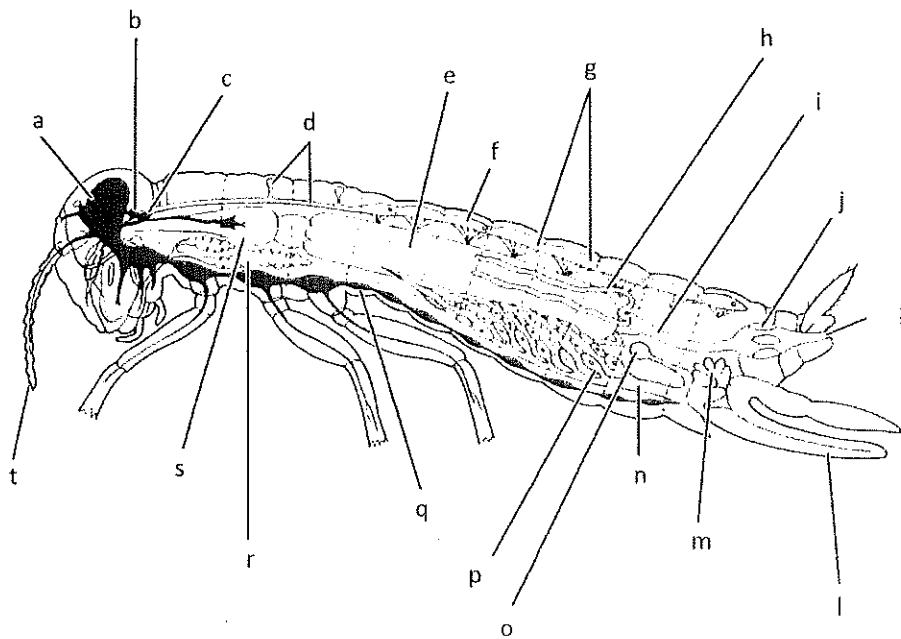
xv) _____ describes the changing of one type of tissue into another without the intervention of embryonic tissue.

- A. Metaplasia
- B. Neoplasia
- C. Hyperplasia
- D. Hypertrophy

SECTION B

2. Label the following insect parts:

[20 Marks]



3. Describe the general characteristics of the following insect orders:

- a) Coleoptera
- b) Hemiptera
- c) Diptera
- d) Isoptera

[5 Marks]

[5 Marks]

[5 Marks]

[5 Marks]

4. Give the correct terms for:

- a) Simple eyes [1 Mark]
- b) Pores used for gaseous exchange by insects [1 Mark]
- c) Reproduction of male insects without fertilization of eggs [1 Mark]
- d) The three segments of an insect's thorax [3 Marks]
- e) Pairs of wings on the middle and last segments of an insect's thorax [2 Marks]
- f) Insect legs adapted for
 - i. running, [1 Mark]
 - ii. digging, [1 Mark]
 - iii. grasping, [1 Mark]
 - iv. jumping and [1 Mark]
 - v. swimming [1 Mark]
- g) Any animal, plant, or protist that spends a portion or all of its life intimately associated with another organism. [1 Mark]
- h) Parasites that live inside the body of their host. [1 Mark]
- i) A parasite that wanders in to an organ in which it is not usually found. [1 Mark]
- j) A host that makes the parasite available for transmission to another host and is usually not affected by the infection. [1 Mark]
- k) Parasites are generally classified under which three categories? [3 Marks]

5. With the aid of diagrams, explain the male and female reproductive systems of an insect. [20 Marks]

END OF PAPER