



Time Allowed: 3.00 Hours

Maximum Marks: 70

Marks: 35

Note: 1. Answer all the questions, 8×1=8
2. Choose the appropriate code and write the answer with the option code.

- 1) A true fruit is the one where
 a) Only ovary of flower develops into fruit.
 b) Ovary and Calyx of the flower develops into fruit.
 c) Ovary, Calyx and Thalamus of the flower develops into fruit.
 d) All the floral parts of the flower develops into fruit.
- 2) Which of the following flowering plant with nodules containing filamentous nitrogen fixing microorganism?
 a) Cicer arietinum
 b) Casuarina equisetifolia
 c) Cycas revoluta
 d) Croton tiglium
- 3) Match and choose the correct sequence:
 a) Endoplasmic reticulum - i) Harry Beevers
 b) Ribosomes - ii) K.R. Porter
 c) Glyoxysomes - iii) Christian de Duve
 d) Lysosomes - iv) George Palade
 a) a-ii, b-iii, c-i, d-iv
 b) a-iv, b-iii, c-ii, d-i
 c) a-ii, b-iv, c-i, d-iii
 d) a-iv, b-i, c-ii, d-iii
- 4) If APC is defective in human cell, which of the following is expected to occur?
 a) Chromosomes will be fragmented
 b) Chromosomes will not condense
 c) Chromosomes will not segregate
 d) Recombination of chromosomes will occur
- 5) Choose the correct statements:
 a) About 98% of the total water uptake occurs in plants by passive absorption.
 b) In a solution of standard atmospheric pressure, $\psi_w = \psi_s$.
 c) Increased DPD favours endosmosis.
 d) Aquaporin is a carrier protein.
 a) All are correct
 b) a, b, c
 c) b, c, d
 d) only c and d
- 6) Choose the correct sequence:
 1. Die back disease of citrus - i) MO
 2. Whip tail disease - ii) Zn
 3. Brown heart of Turnip - iii) Cu
 4. Little leaf - iv) B
 a) 1-iv, 2-iii, 3-ii, 4-i
 b) 1-iii, 2-iv, 3-i, 4-ii
 c) 1-iv, 2-i, 3-ii, 4-iii
 d) 1-iii, 2-i, 3-iv, 4-ii
- 7) C_4 cycle occurs in
 a) Mesophyll cells
 b) Lower epidermis of leaf
 c) Bundle sheat cells
 d) a and c
- 8) Which of the following reaction is not involved in Kreb's cycle?
 i) Shifting of phosphate from 3C to 2C.
 ii) Splitting of Fructose 1, 6 bisphosphate into two 3C compounds.
 iii) Dephosphorylation from the substrates.
 iv) Two molecules of FAD and oxidized to $FADH_2$.
 a) ii and iv
 b) i and iv
 c) i, ii, iii
 d) All of these

Section - II

Answer any four of the following:

4×2=8

- 9) Differentiate: Homoiomorous and Heteromorous lichen
 10) What are Manoxylic and Pycnoxylic wood?
 11) What are Biennials? Give an example.
 12) What are primary metabolites? Give an example.
 13) Why the cells of sclerenchyma and tracheids become dead?
 14) What is Bark?

Section - III

Answer any three of the following: (Q.No. 19 is compulsory)

3x3=9

- 15) Differentiate: Racemose and Cymose inflorescence
- 16) What is binomial system of Nomenclature? Give an example.
- 17) What are the functions of chloroplast?
- 18) What are parameters which control water potential?
- 19) Explain the techniques of Vernalization.

Section - IV

Answer all the questions:

2x5=10

- 20) a) Explain the steps involved in Gram staining method of Bacteria. (OR)
- b) What is aestivation? Explain the types.
- 21) a) What are the functions of Epidermal Tissue system. (OR)
- b) Distinguish between C₃ plants and C₄ plants.

PART - I [BIO-ZOOLOGY] Marks: 35

I. Answer all the questions:

8x1=8

- 1) Who coined the term bio-diversity
 - a) Walter Rosen
 - b) AG Tansley
 - c) Aristotle
 - d) AP dc Candole
- 2) Which of the following have the highest number of species in nature
 - a) Insects
 - b) Birds
 - c) Angiosperm
 - d) Fungi
- 3) Sexually earthworms are
 - a) sexes are separate
 - b) Hermaphroditic but not self-fertilizing
 - c) Hermaphroditic and self-fertilizing
 - d) Parthenogenic
- 4) The sphincter of oddi guards
 - a) Hepatopancreatic duct
 - b) Common bile duet
 - c) pancreatic duet
 - d) cystic duet
- 5) Which one of the following plasma proteins is involved in the coagulation of blood
 - a) Globalin
 - b) Fibrinogen
 - c) Albumin
 - d) Globin
- 6) Synovial fluid is found in
 - a) ventricles of the brain
 - b) spinal cord
 - c) immovable joint
 - d) freely movable joint
- 7) Which of the following gland is related with immunity?
 - a) pineal gland
 - b) adrenal gland
 - c) thymus gland
 - d) para thyroid gland
- 8) Assertion: Nuptial flight is a unique flight taken by the queen bee followed by several drones
Reason: The queen bee produces a chemical substance called pheromone. The drones in that area are attracted to the pheromone and then mating takes place
 - a) Assertion and reason is correct but not related
 - b) Assertion and reason is incorrect but related
 - c) Assertion and reason is correct but related
 - d) Assertion and reason is incorrect but not related

II. Answer any four of the following:

4x2=8

- 9) Compare schiyocoelom and enterocoelom.
- 10) Differentiate white adipose tissue from brown adipose tissue.
- 11) Write the different types of salivary glands.
- 12) What are the heart sounds? When and how are these sounds produced?
- 13) List the disorders of the muscular system.
- 14) Define Cross breeding.

III. Answer any three of the following:

3x3=9

- 15) Why do we call Carolus Linnaeus as the father of modern Taxonomy?
- 16) Comment on the functions of alary muscles.
- 17) How Emphysema occur?
- 18) Differentiate osmoconformers and osmoregulators.
- 19) Draw and label the parts of the newron.

IV. Answer all the questions:

2x5=10

- 20) a) Differentiate between Male and Female Cockroach. (OR)
- b) Explain any five nutritional and digestive disorders in human.
- 21) a) Discuss the various techniques adopted in cattle breeding. (OR)
- b) Describe the mechanism by which the human heart beat is initiated and controlled.