

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
  2. All questions carry equal marks.
  3. Draw neat labelled diagrams wherever necessary.

- Q.1** Answer **any two** questions from the following.
- a) Describe the origin of nutritive types. 06
  - b) Explain the functional consequence of molecular composition and arrangement on membrane physiology. 06
  - c) What is hunger drive? Explain hepatostatic theory of hunger drive. 06
  - d) Describe the adaptation of gut to diet. 06
- Q.2** Answer **any two** question from the following.
- a) Give an account of hemolymph as a circulatory fluid. 06
  - b) Explain pressure and flow in vertebrate circulatory system. 06
  - c) Explain physiological hearts with reference to arthropods. 06
  - d) Citing suitable examples explain the circulatory mechanisms of body fluids. 06
- Q.3** Answer **any two** questions from the following.
- a) Explain in detail physiology of chromosome involvement as non-muscular contractile element. 06
  - b) Write an account on source of energy for muscular contraction. 06
  - c) Explain physiology of catch muscle and delayed relaxation. 06
  - d) Explain working of oscillary postural muscles in insects. 06
- Q.4** Answer **any two** questions from the following.
- a) Give in detail the central pattern generators in invertebrates. 06
  - b) Explain membrane potential in an excitable membrane. 06
  - c) Describe the structure of cation permeable channels and chloride channels. 06
  - d) With reference to synaptic transmission explain the role of any two chemical transmitters. 06
- Q.5** Write short notes on **any two** of the following.
- a) Feeding patterns in animals. 06
  - b) Fluid compartments. 06
  - c) Sliding filament theory. 06
  - d) Nerve nets. 06

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