

[Time: 2½ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. Attempt all questions.
 2. Figures to the right indicate full marks.
 3. Draw neat and labelled diagrams wherever necessary.

Q.1 Answer **any two** questions from the following:

- a) Discuss the relationship between animal size and metabolism.
- b) Write an account on respiratory pigments.
- c) Explain ammonia toxicity.
- d) Discuss detoxification pathways during metamorphosis.

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Q.2 Answer **any two** questions from the following:

- a) With the help of suitable examples explain respiratory evaporation.
- b) Describe the structure and functions of contractile vacuole and coelomoducts.
- c) Give an account of the structure of the vertebrate nephron.
- d) Explain blood replacement in view of human perspective.

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Q.3 Answer **any two** questions from the following:

- a. Briefly explain the role of maternal DNA in reproduction.
- b. Explain the endocrine regulation of reproduction in insects.
- c. Explain interaction of steroid hormones and nervous tissue is important.
- d. Describe the various methods of treatment for infertility.

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Q.4 Answer **any two** questions from the following:

- a) Describe the endocrine system in lower invertebrates.
- b) Write an account on the G-E-P cells with respect to regulation of hormones.
- c) Explain the physiology of chemoreception.
- d) Explain the physiological effectors in bioluminescent systems.

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Q.5 Answer **any two** questions from the following:

- a) Explain oxygen consumption and RQ during hibernation.
- b) Describe the implications of kidney stones in the health of human being.
- c) Explain the evolution of gametes.
- d) Functioning of electric organs.

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