

SECTION – I

2. Write short answers to any EIGHT (8) questions :

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- (i) What are heat shock proteins? Give their role.
- (ii) How are animals able to do osmoregulation in hypotonic environment?
- (iii) Define homeostasis. Give components of homeostatic control system.
- (iv) Write name of regions of vertebral column with number of vertebrae.
- (v) Define remodeling.
- (vi) How does digitigrade differ from unguligrade?
- (vii) Write cause and symptoms of syphilis.
- (viii) What do you mean by fruit set and fruit ripening?
- (ix) Name two common animals and two plants of temperate deciduous forests.
- (x) Differentiate between coniferous alpine and boreal forests.
- (xi) Define non-renewable resources. Give one example.
- (xii) How environment is a source essential to maintain life?

3. Write short answers to any EIGHT (8) questions :

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- (i) Define coordination. Give its types in animals.
- (ii) Give only two commercial uses of Gibberellins.
- (iii) Write the distribution of pain and cold receptors on animal body.
- (iv) Give the relationship between the terms gene and locus.
- (v) What do you understand by over-dominance?
- (vi) Write the pattern of inheritance of sex influenced traits.
- (vii) What are restriction endonucleases? Give their functions.
- (viii) Give the biotechnological uses of bacteria in mining.
- (ix) What is gene therapy? Write at least one example.
- (x) Write difference between habitat and niche.
- (xi) Define climax community with one example.
- (xii) Give the significance of predation.

4. Write short answers to any SIX (6) questions :

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- (i) What is grey crescent? Give its role.
- (ii) How can aging be slowed down?
- (iii) How do histone and DNA interact with each other in chromosome?
- (iv) What is transforming principle?
- (v) How is initiation complex formed in translation?
- (vi) In what respect mitosis in plants differ from that of animal cell?
- (vii) Differentiate between benign and malignant tumor.
- (viii) State endosymbiont hypothesis with example.
- (ix) What is meant by “Modern Synthesis”?

SECTION – II

Note : Attempt any THREE questions.

5. (a) Discuss osmoregulation in plants for their survival. 4
- (b) Define cell cycle and also give a detailed account of phases of interphase. 4
6. (a) Highlight the main points of that model which explains the muscle contraction. 4
- (b) Discuss important steps of nitrogen cycle. 4
7. (a) Describe the location, secretion and roles of thyroid gland. 4
- (b) State and explain Hardy-Weinberg theorem. 4
8. (a) Give details of menstrual cycle in human females. 4
- (b) Define law of independent assortment. Explain it with an example. 4
9. (a) What are growth correlations? Explain Apical Dominance, its removal and its applications. 4
- (b) Explain the methodology to carried out DNA finger-printing. 4