

Biology (Subjective)

Time: 2:40 Hours

Marks : 68

Section - I

RWP-1-24

2. Write short answers of any eight parts of the question.

[2x8=16]

- (i) Why color of plant leaves turns yellow in autumn?
- (ii) How plants protect their enzyme from denaturation at high temperature?
- (iii) Compare hydrophytes with xerophytes.
- (iv) Out of 12 pairs of ribs, why only two pairs of ribs are called free floating ribs?
- (v) Describe internal structure of cilium.
- (vi) How low Ca^{+2} in blood affects bones in growing children?
- (vii) Differentiate between chemotactic and chemotropic movements.
- (viii) Name the cells found outside seminiferous tubules. Give one main function of those cells.
- (ix) Why is there no productivity in profundal zone in aquatic ecosystem?
- (x) What is Tundra? Does this ecosystem exist in Pakistan?
- (xi) How combustion of fossil fuels is related to stone cancer?
- (xii) Write down the two impacts of ozone layer depletion on human life.

3. Write short answers of any eight parts of the question.

[2x8=16]

- (i) How do plants respond to various stimuli under stress?
- (ii) Define Threshold frequency to initiate nerve impulse.
- (iii) What do you know about commercial applications of Gibberellins? (at least two).
- (iv) Why is blood group "O" considered universal donor?
- (v) What do you know about XX - XY mechanism of sex determination?
- (vi) Define product rule. Give an example.
- (vii) How cancer patients are being treated by gene therapy?
- (viii) Give two practical uses of DNA finger printing technology.
- (ix) What are restriction endonucleases? Give example.
- (x) How does length of food chain affect an ecosystem?
- (xi) What is pyramid of energy?
- (xii) Define Autecology. Give example.

4. Write short answers of any six parts of the question.

[2x6=12]

- (i) The plant cell size increase in number of cells and flowering are affected by light. How?
- (ii) Differentiate between Gastrula and Neurula.
- (iii) Compare the homologous and analogous organs.
- (iv) How a particular amino acid is brought at a specific ribosomal site? Give the role of enzyme also.
- (v) What is point mutation? Write one example.
- (vi) Draw the structural formulae of Adenine and Guanine.
- (vii) Why Anaphase is considered critical phase?
- (viii) How cancer cells are different from normal cells?
- (ix) Write any two points of Lamarckism.

Section - II**Note: Attempt any three questions from the following:**

(8x3=24)

5. (a) What is Renal failure? Describe its treatment. [4]
- (b) How does cytokinesis occur in animal cells? In which way does it differ from that in plant cell? [4]
6. (a) Discuss genetic and hormonal causes about deformities of skeleton. [2+2]
- (b) Explain Nitrogen cycle with the help of its sketch? [4]
7. (a) Which factors are involved in establishment of resting membrane potential? Explain. [4]
- (b) Define Hardy-Weinberg Theorem. How its equation is used to calculate allele & genotype frequency? [4]
8. (a) Discuss sex determining pattern in grass hopper and birds. [4]
- (b) Describe female reproductive cycle in human. [4]
9. (a) What is growth? Discuss its phases in plants. [4]
- (b) Write a note on transgenic animals. [4]

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