

Section-A

(Multiple Choice Questions (MCQ's))

Q.1 Choose the correct answer for each from the given options:

- (i) During the drought conditions to reduce the rate of transpiration in plants, the abscisic acid is released from _____
 (a) Guard cell (b) Mesophyll cell (c) Root hairs (d) Xylem
- (ii) When ecological succession occurs on dry terrestrial places like rocks, it is called _____
 (a) Xerosere (b) Hydrosere (c) Root hairs (d) Hydrach
- (iii) Mendel's second law of inheritance can be demonstrated by:
 (a) Monohybrid crosses (b) Test cross (c) Dihybrid cross
 (d) Both (a) and (b)
- (iv) The nature of endosperm (food storage tissue) is _____
 (a) N (b) 2N (c) 3N (d) 4N
- (v) If there are 60 nitrogenous bases on mRNA, how many amino acids could be coded?
 (a) 20 (b) 30 (c) 40 (d) 60
- (vi) Vertically sea is divided into _____ zones.
 (a) Neritic and oceanic (b) Euphotic and aphotic
 (c) Euphotic, bathyal and abyssal (d) Bathyal and abyssal
- (vii) Plasmolysis can occur, when a plant cell is placed in _____ solution.
 (a) Hypertonic (b) Hypotonic (c) Isotonic (d) None of these
- (viii) During secondary growth, the part of xylem becomes non functional for transport, due to some chemical and physical changes this part of xylem is called _____
 (a) Sap-wood (b) Heart wood (c) Lenticel (d) Autumn wood

Section-B (Short Answer)

- Q.2 How and when does the meiotic error take place?
- Q.3 Enlist the types of plant movements that occur in radially symmetrical parts in response to external stimuli. Also write the nature of stimulus against each type.
- Q.4 What is APICAL DOMINANCE? Which hormones maintains it?
- Q.5 Give role of different hormones in plant movement?
- Q.6 Why gymnosperms are called heterosporous? Enlist the cells of their male gametophyte.
- Q.7 How did Hershey and Chase differentiate between DNA and proteins in their experiments, while proving that DNA is hereditary material.
- Q.8 Define any TWO of the following:
 (i) Spadix (ii) Nucleosome (iii) Phytochromes
- Q.9 How the environmental conditions of tundra are not favourable for producers and consumers?
- Q.10 Distinguish between any ONE of the following in tabulated form.
 (i) Mesophytes and Hydrophytes, (ii) Hydrosere and Xerosere
- Q.11 Why humidity is low at high altitudes and how the rate of transpiration is neutralized there?
- Q.12 How does "Chromosomal theory of heredity". Justifies Mendel's works? Give any three points.
- Q.13 What are CODONS and ANTI-CODONS. How they work in protein synthesis?
- Q.14 How sex is determined in human being?
- Q.15 Give any TWO events of each G1 and G2 phases occur during interphase of Mitosis?

Section-C (Descriptive Answer)

- Q.16 Give the terms for the alteration in genetic material. What are the types of chromosomal aberration?
- Q.17 Which type of cell division result equal quantitative and unequal qualitative distribution of chromosomes? Describe with the help of diagram.
- Q.18 A man whose father is normal and mother is colour blind marries a carrier woman? What will be the expected phenotype proportion in their children? (Prove it with the help of genetic crosses) Gene for normal = (Gene for colour blind = (n)
- OR What is UP-WELLING? Describe the marine life in various zones of the sea.