

Section-A

Multiple Choice Questions (MCQ's)

- Q.1 Choose the correct answer for each from the given options:
- (i) The multiple effects of a single gene or allele, termed as:
 (a) Polygenic-inheritance (b) Pleiotropy
 (c) Continuously varying trait (d) Multiple Inheritance
- (ii) Zone of sea, which consists of Pelagic and benthic zones;
 (a) Euphotic (b) Bathyl (c) Abyssal (d) Neritic
- (iii) The structure which protects external part of plant after shading of epidermis
 (a) Suberin (b) Cuticle (c) Lenticels (d) Secondary Epidermis
- (iv) The plant hormone which inhibits the growth of plants?
 (a) Auxin (b) Abscisic Acid (c) Ethene (d) Gibberellins
- (v) Intercalary meristem may occur at:
 (a) Between Inter-nodes (b) Below the node (c) Both (a) and (b)
 (d) None of these
- (vi) Which one of the following is not a succession?
 (a) Hydrosere (b) Protosere (c) Mesosere (d) Xerosere
- Type of chromosome when centromere is located at the centre.
 (a) Telocentric (b) Metacentric (c) Sub-Metacentric (d) Acrocentric
- (viii) The type of inflorescence where flowers are arranged on elongated peduncle and

whole inflorescence is covered by a large bract, called:

- (a) Spike (b) Spadix (c) Scorpioid (d) Spikelet
- (ix) Meiotic prophase-I sub stage, where terminalization takes place.
 (a) Leptotene (b) Pachytene (c) Diplotene (d) Diakinesis

Section-B (Short Answer)

Note: Answer any TEN of the following questions. Each question carries 02 marks.

- Q.2 Why seed dormancy is significant for plants?
- Q.3 Why "Hetero-Chromatin" part of chromosome is never expressed?
- Q.4 What happens when "Non-Disjunction" occurs in chromosomes?
- Q.5 How plants maintain their temperature in cold days?
- Q.6 What is the role of Pollen tube in spermopsids?
- Q.7 Define any TWO of the following:
 (a) Thigmotropism (b) Topography (c) Ecological Niche
 (d) Nuclosome
- Q.8 Distinguish between any ONE of the following:
 (a) Hydrophytes and Mesophytes (b) Vascular-cambium and Cork-Cambium
- Q.9 Why do steep slopes limit vegetation?
- Q.10 Why "Coniferous Forest" are named so, where these forest are located in Pakistan?
- Q.11 Enlist polygenic traits found in Plants, Animals and Human.
- Q.12 What is "Elongation Phase of Growth" in higher plant.
- Q.13 Why mitosis is "Amphi-Astral" in Animals and "An-Astral" in plants?
- Q.14 How does "Ethene" ripens the fruit?

Section-C (Descriptive Answer)

Note: Answer any TWO of the following questions. Each question carries 07 marks.

- Q.15 What do you mean by KARYOKINESIS? Describe various stages of somatic cell-division, through which a diploid nucleus passes in order to produce two diploid daughter nuclei?
- Q.16 What is HEREDITY MATERIAL? Describe the structure of molecule which works as heredity material with the help of diagram.
- Q.17 A female marries with a colour-blind male, have a chance of only normal children. The husband died and female re-marry with a male have normal homozygous children. What will be the Genotype and phenotype of second husband?
 (Prove it with crosses)

(Gene for Normal _____ C)
 (Gene for Colour-blind _____ c)

OR

If a "Normal-male" marries a "Haemophilic carrier female," how does the transmission of haemophilia take place in the offsprings?

(Do by making genetic cross)

(Gene for Normal _____ H)
 (Gene for Haemophilia _____ h)