VCD/01/222-FYBSC SEMESTER I BOTANY - II DURATION - 3 HRS MARKS-100

1. **All** questions are **compulsory.**
2. **All questions** carry **equal** marks.
3. Draw **neat, labelled diagrams** wherever necessary.

Q1. A. Choose the correct option & rewrite the statements: **(10 Marks)**

1. Cell wall is absent in _____
   a. plants b. animals c. bacteria d. fungi
2. _____ is a linear, unbranched polymer, consisting of straight polysaccharide chains made of glucose units
   a. Lipid b. Glycoprotein c. Cellulose d. Megafibril
3. Fluid mosaic model is explained in _____
   a. Cell wall b. Nucleotide c. Plasma membrane d. Vacuole
4. Detritus Food Chain starts with the _____.
   a. Dead Mangrove Leaves b. Phytoplanktons c. Grass d. Trees
5. The Simplified Energy Flow model was proposed by _____.
   a. Charles Elton b. E P Odum c. Ernst Haeckel d. Carl Linnaeus
6. Select the Edaphic Abiotic Factor from the following:
   a. Sunlight b. Air c. Soil d. Gravity
7. The allele which expresses itself in the immediate next generation suppressing the other allele is _____ allele
   a. Dominant b. Recessive c. Codominant d. incomplete
8. The checkerboard used to calculate the phenotype and genotype ratio of the crosses is called _____.
   a. Punnett square b. bar graph c. karyotype d. idiogram
9. _____ is the cross involving crossing of F1 X F1.
   a. selfing b. test cross c. back cross d. reciprocal
10. The ratio of Dominant epistasis is ____.
    a. 9:3:4 b. 12:3:1 c. 3:1 d. 9:3:3:1

Q1 B. Answer the following in one sentence **(10 Marks)**

1. What is the main function of rough Endoplasmic Reticulum
2. Define the Second Law of Thermodynamics applicable to ecosystems.
3. Give a function of Decomposers with its examples.
4. What is Epistatic interaction?
5. Which are the laws of inheritance ?

Q2. Answer any TWO of the following questions **(20 Marks)**

1. Describe the fluid mosaic model to explain the ultrastructure of plasma membrane.
2. Describe the ultrastructure and functions of Endoplasmic reticulum.
3. Describe the ultrastructure of the cell membrane. Add a note on its functions.
4. Give the composition of cell membrane

Q3. Answer any TWO of the following questions **(20 Marks)**

1. Discuss about the different components of the ecosystem and its types.
2. Describe the Y-shaped energy flow model with the help of a neat and labelled diagram.
3. Give a detailed note on types of Ecological pyramids with its examples.
4. Explain the Ecological food chain. Add a note on its types.

Q4. Answer any TWO of the following questions **(20 Marks)**

1. What is an allele ? Explain the term multiple allele? Perform to following crosses to give the blood group of the offsprings
   a. Father is AB and the Mother is A (Homozygous)
   b. Father is O and the Mother is B (Heterozygous)
   c. Father is B (Homozygous) and mother is A (heterozygous)
2. Explain Dihybrid cross with an example
3. Explain Monohybrid cross with an example
4. A farmer crossed a true-breeding Round seed plant bearing yellow seeds with a true-breeding wrinkled seed plant bearing green seeds. He found that all the F1 offspring were heterozygous and were Round shaped with yellow colored seeds. He further crossed the F1 progeny with the F1 progeny to raise the F2 generation. Show the crosses to give the phenotype ratio and genotype ratio of F1 and F2 generations.

Q5. Short Notes (any FOUR) **(20 Marks)**

1. Ultrastructure of chloroplast
2. Types of Endoplasmic Reticulum
3. Schematic diagram of Upright Energy flow model
4. Ecological Food Web
5. Test cross and back cross
6. Explain the terms:- Genotype, Phenotype, homozygous, Trait , Gene

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