

[64]

SARDAR PATEL UNIVERSITY
S. Y. B.Sc. (III SEMESTER) EXAMINATION

2021

Wednesday, 6th January

2.00 p.m. to 4.00 p.m.

USO3EBIO01 CYTOGENETICS AND PLANT BIOLOGY

Total Marks: 70

Q.1. Select the correct answer and write it in the answer sheet

(10)

1. The plant cell wall is made up of _____
(a) Hemi cellulose (b) Cellulose (c) Pectin (d) All these
2. The lysosomes are formed from _____
(a) Plasma membrane (b) Mitochondria (c) Cellwall (d) Golgi complex
3. The eukaryotic cell nucleus has nuclear membrane, Nucleoplasm, Nucleolus and _____
(a) Ribosomes (b) Chromosomes (c) Lysosomes (d) Pinosomes
4. Who is known as the "Father of Genetics"?
(a) Morgan (b) Mendel (c) Watson (d) Bateson
5. The genotypic ratio of a monohybrid cross is _____
(a) 1:2:1 (b) 3:1 (c) 2:1:1 (d) 9:3:3:1
6. Capitulum inflorescence is observed in family _____
(a) Asteraceae (b) Lamiaceae (c) Asclepiadiceae (d) Euphorbiaceae
7. Family _____ shows presence of Dydinamous anthers
(a) Asteraceae (b) Lamiaceae (c) Asclepiadiceae (d) Euphorbiaceae
8. _____ Pigments are involved in photosynthesis
(a) Chlorophylls (b) Xanthophyll (c) Carotenoids (d) all these
9. The first product of Calvin cycle is _____
(a) OAA (b) PGAL (c) PGA (d) Citric ac
10. In noncyclic photophosphorylation, _____ acts as electron donor
(a) CO₂ (b) O₂ (c) H₂O (d) None

①

(P.T.O.)

Q.2. Write true or false for following statements

(08)

1. The plasma membrane is lipoprotein in nature
2. Lysosomes are also called 'suicidal bags'
3. When F_1 individuals are crossed with recessive parent, it is called back cross
4. Dominant epistasis produces phenotypic ratio 12:3:1
5. Brassicaceae family has verticillaster inflorescence
6. Members of Euphorbiaceae are also called as milkweeds
7. In green plants, stomata remain closed during day time
8. Transpiration helps to remove extra water content from plant body

Q.3. Answer the following in brief (any 10)

(20)

1. Discuss the functions of cell wall
2. Draw a well labelled diagram of Mitochondrion
3. Write a short note on Lysosomes
4. Which seven traits did Mendel consider for his experiments using pea plant?
5. What is monohybrid cross?
6. Explain phenomenon of Dominance
7. Describe the androecium of Asclepiadaceae
8. Write the floral characters of family Euphorbiaceae
9. State the economic importance of Brassicaceae members
10. Explain the structure of Stomata with diagram
11. Write in brief about the pigment systems found in green plants
12. Give a schematic presentation of C_4 cycle

Q.4. Write a detailed note on following (Any four)

(32)

1. Write a detailed note on chromosome structure and types
2. Give an account of Lysosomes and their functions
3. Show Dihybrid cross between $YYRR$ and $yyrr$. Write phenotypic ratio and explain the mechanism.
4. Write a note on Complementary Epistasis
5. Discuss the distinguishing characters of family Lamiaceae and add a note on its economic importance
6. Give an account of general characters of Asteraceae
7. Give an illustrated account of Calvin cycle
8. What is photophosphorylation? Discuss cyclic and noncyclic mode using diagram

— X —

②