

[45/A-17] Seat No : _____

No. of Printed Pages : 02

SARDAR PATEL UNIVERSITY
B.Sc. THIRD SEMESTER EXAMINATION
WEDNESDAY 27th NOVEMBER 2019
02:00 pm to 04:00 pm
USO3EBIO 01
(CYTOGENETICS AND PLANT BIOLOGY)

Marks: 70

Note: 1. Answers of all the questions (including multiple choice questions) should be written in the provided answer book only

2. Draw neat and labeled diagrams wherever necessary

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

(10)

1. _____ proposed the Unit membrane model of plasma membrane

- (a) Robertson (b) Singer and Nicholson
(c) Danielli and Davson (d) Watson and Crick

2. Hydrolytic enzymes occur in _____

- (a) Lysosome (b) Mitochondria (c) Chloroplast (d) Nucleus

3. _____ particle meant for ATP synthesis are present on inner surface of inner mitochondrial membrane

- (a) A1 (b) F1 (c) P1 (d) T1

4. The term _____ designates the physical appearance of an organism

- (a) Nanotype (b) Ecotype (c) Phenotype (d) Genotype

5. Recessive epistasis modify the classical dihybrid ratio of 9:3:3:1 into _____

- (a) 12:3:1 (b) 9:7 (c) 9:6:1 (d) 9:3:4

6. The cross of F1 hybrid with recessive parent is called _____

- (a) Reciprocal cross (b) Back cross
(c) Test cross (d) Crossing over

7. Cruciform corolla is a characteristic of family _____

- (a) Brassicaceae (b) Asclepiadiceae (c) Euphorbiaceae (d) Asteraceae

8. Scientific names are always written in _____

- (a) Calibri (b) Aerial (c) Italics (d) Bold

9. _____ is considered a necessary evil

- (a) Transpiration (b) Respiration
(c) Photorespiration (d) Photosynthesis

10. End products of photosynthesis are _____

- (a) Oxygen and Hexose sugar (b) Oxygen and Fat
(c) Carbon dioxide and Carbohydrate (d) Carbon dioxide and protein

Q.2. Answer the following questions in brief (Any 10)

(20)

1. Discuss the functions of mitochondria
2. Define chromosome
3. What are the functions of cell wall?
4. Explain back cross
5. Write note on incomplete dominance
6. Define the terms dominant and recessive allele
7. What is binomial nomenclature?
8. Give the economic importance of any two plants of Euphorbiaceae family
9. Write any four distinguishing characters of family Asclepiadaceae
10. Discuss in brief osmotic regulation in plants
11. Write about CAM
12. Define photosynthesis

Q.3. (a) What are lysosomes? Explain its types

(06)

(b) Describe the fluid mosaic model of plasma membrane

(04)

OR

Q.3. (a) Explain the structure and functions of nucleus

(06)

(b) Describe the ultra structure of mitochondria

(04)

Q.4. (a) Explain Mendel's Laws of Independent Assortment

(06)

(b) Discuss why Mendel selected pea plant for his experiments

(04)

OR

Q.4. (a) Write note on Dominant Epistasis

(06)

(b) State and explain Mendel's law of dominance

(04)

Q.5. Discuss the general characters and economic importance of family Lamiaceae

(10)

OR

Q.5. Describe the general characters of family Asteraceae

(10)

Q.6. Explain C3 Cycle

(10)

OR

Q.6. Write note on:

(a) Cyclic photophosphorylation

(05)

(b) Transpiration

(05)

— X —

(2)