

**DEPARTMENT OF SCHOOL EDUCATION  
CHNGALPATTU DISTRICT  
SECOND ASSESSMENT TEST- JANUARY.2022**

STD: XII

BIOLOGY

Max. Marks: 70

Time: 3 Hours

**PART – I. BIO –BOTANY (Marks: 35)****SECTION – 1**

Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer. 8 X 1 = 8

1. Match the following

Column -I		Column -II	
A	Monoploidy	1	$2n - 1$
B	Monosomy	2	$2n + 1$
C	Nullisomy	3	$2n + 2$
D	Trisomy	4	$2n - 2$
E	Tetrasomy	5	x

- a). A-5, B -1, C - 4, D -2, E - 3      b). A - 5, B - 2, C - 4, D - 1, E- 3  
 c). A - 2, B - 1, C -3, D - 5, E - 4      d). A - 1, B - 5, C - 3, D - 2, E - 4
2. Which Mendel's law is responsible for the genetic diversity?  
 a). Law of Independent Assortment      b). Law of Segregation  
 c). Law of Dominance      d). Law of Recessive
3. Size of the pollen grain in Myosotis  
 a). 10 micrometer      b). 20 micrometer      c). 200 micrometer      d). 2000 micrometer
4. The modified F<sub>2</sub> ratio in Lethal genes  
 a). 1 : 1      b). 1 : 2      c). 2 : 3      d). 1 : 4
5. The number of linkage group in Maize  
 a). 2      b). 4      c). 7      d). 10
6. Changing the codon ATT to UAA represents  
 a). Missense mutation      b). Non- sense mutation  
 c). Frame shift mutation      d). Deletion mutation
7. Identify the correct pair  
 a). Coupling - Trans configuration  
 b). Repulsion - Cis configuration  
 c). Crossing over - Produces new combination of genes  
 d). Linkage - Increases new combination of genes
8. Identify the incorrect pair  
 a). Sporopollenin - Exine of pollen grain  
 b). Tapetum - Nutritive tissue for developing microspores  
 c). Nucellus - Nutritive tissue for developing embryo  
 d). obturator - Directs the pollen tube into micropyle

**SECTION – 2****Answer any four questions:****4 X 2 = 8**

9. What is somatic apospory?  
 10. Draw and label the diagram of Dicot seed  
 11. What are Pleiotropic genes?  
 12. Define - *cis configuration*  
 13. Differentiate from Missense from Non -sense mutation.  
 14. What is incomplete dominance?

**SECTION – 3****Answer any three of the following. Question no.18 is compulsory: 3 X 3 = 9**

15. Mention the name of manmade cereal. How it is formed?
16. Write short notes on significance of Ploidy
17. Explain Dihybrid test cross.
18. Draw and label the diagram of *Ulmusglabra*
19. Write the function of Tapetum

**SECTION – 4****Answer in Details: 2 X 5 = 10**

20. (a). Explain the development of Male gametophyte with neat labelled diagram  
(Or)
- (b). Describe the different types endosperm based on the mode of development
21. (a). Explain Monohybrid cross (Or) (b). Describe the mechanism of Crossing over.

**PART – II. BIO – ZOOLOGY (Marks: 35)****SECTION – 1****Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer. 8 X 1 = 8**

1. Match the following

Column – I		Column - II	
1	Inhibin	i	Leydig cells
2	Androgen	ii	Vesiculase
3	Seminal Plasma	iii	Tunica albuginea
4	Testis	iv	Sertoli cells

- a). 1 – ii, 2 – i, 3 – iv, 4 – iii
  - b). 1 – iv, 2 – i, 3 – ii, 4 – iii
  - c). 1 – i, 2 – ii, 3 – iii, 4 – iv
  - d). 1 – iv, 2 – iii, 3 – ii, 4 – i
2. Sperm Acrosome is derived from
    - a). Endoplasmic reticulum
    - b). Lysosome
    - c). Golgi bodies
    - d). Mesosome
  3. Autogamy is seen in
    - a). Trichonympha
    - b). Monocystis
    - c). Vorticella
    - d). Paramecium
  4. The foetal membrane that forms the basis of umbilical cord
    - a). Amnion
    - b). Allantois
    - c). Yolk sac
    - d). Chorion
  5. The gland in the female which is homologous to the prostate glands of male
    - a). Skene's gland
    - b). Bartholin's gland
    - c). Cowper's gland
    - d). Mammary gland
  6. Select the correct pair
    - a). XX – XO - Moths
    - b). XX - XY - Fishes
    - c). ZW – ZZ - Drosophila
    - d). ZO – ZZ - Butterflies
  7. The antibodies administered to the mother to prevent Erythroblastosis foetalis.
    - a). Anti – A
    - b). Anti – D
    - c). Anti – C
    - d). Anti – E
  8. In this type only females are produced by parthenogenesis
    - a). Arrhenotoky
    - b). Thelytoky
    - c). Amphitoky
    - d). Both b and c

**SECTION – 2****Answer any four questions: 4 X 2 = 8**

9. Differentiate Foeticide from Infanticide
10. Write the uses of Foetoscope
11. Define Syngamy. Mention its types.
12. State Lyon's hypothesis
13. What is Kin selection?
14. What are Holondric genes?

**SECTION – 3**

**Answer any three of the following. Question no.18 is compulsory: 3 X 3 = 9**

15. How the sex is determined in Human beings?
16. Write short notes on Conjugation
17. Define the following terms –(i). Vasectomy (ii). Lactational Amenorrhoea
18. Draw the various events of Fertilization
19. Explain the different phases of Life cycle

**SECTION – 4**

**Answer in Details: 2 X 5 = 10**

20. (a). Define parthenogenesis. Explain its types with examples.  
(Or)  
(b). Describe the structure of Human sperm
  21. (a). Explain the inheritance of Colour blindness with the help of marriage between Normal visioned Man and Colour blind Women.  
(Or)  
(b). Write short notes on the following- (i). ZIFT (ii). Test tube Baby (IVF)
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