

QUARTERLY EXAMINATION - 2022  
BIOLOGY

|   |   |   |   |   |   |   |   |   |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|----|----|----|

Marks : 70

Q  
2 - Std

Time : 3.00 Hrs.

PART - I (BIO - BOTANY)

8 X 1 = 8

Note : i) Answer all the questions.

ii) Choose and write the best option code and the corresponding answer.

Assertion : Sporopollenin preserves pollen in fossil deposits.

Reason : Pollen wall material resistant to physical and biological decomposition.

- a) Assertion is true, reason is false  
b) Assertion is false, reason is true  
c) Both assertion and reason are not true  
d) Both assertion and reason are true
2. The plant which reproduce through leaves  
a) Murraiah                      b) Gingifer  
c) Dalbergia  
d) Bryophyllum
3. The experiment used to prove that trait is not sex dependent, is  
a) Monohybrid cross      b) Test cross  
c) Back cross  
d) Reciprocal cross
4. Match the following correctly.  
i) Monosomy - a)  $2n - 2$                       a) i-a, ii-b, iii-c, iv-d  
ii) Tetrasomy - b)  $2n + 1$                       b) i-c, ii-d, iii-b, iv-a  
iii) Trisomy - c)  $2n - 1$                       c) i-c, ii-d, iii-a, iv-b  
iv) Nullisomy - d)  $2n + 2$                       d) i-d, ii-b, iii-a, iv-c
5. Which of the following one is used as a Biosensor.  
a) Electrophoresis      b) Bioreactors      c) Vectors      d) Electrophoresis
6. EcoRI - cut the palindromic sequence of DNA at  
a) 5'CGTTCG3'      b) 5'GATATA3'  
3'ATCGTA5'      3'CACTAT5'      c) 5'AATTC3'      d) 'CACGTA 3'  
3'CTTAAG5'      'CTCAGT5'
7. Secondary metabolite is obtained from this technique  
a) Organ culture      b) Apical meristem culture      c) Protoplasm culture      d) Cell suspension culture
8. Cryo preservation means if it a process to preserve plant cell,  
a) at very low temperature by using ether      b) at very high temperature of  $121^{\circ}\text{C}$   
c) at very low temperature of  $-196^{\circ}\text{C}$  using liquid nitrogen      d) encapsulation by using agar
- Note : Answer any four questions only.                      4 X 2 =
9. What is cybrid?  
10. What are the tools used in Genetic Engineering.  
11. What is sharbati sonora? How it is developed?  
12. Give the names of the scientists who rediscovered Mendelism.  
13. What is meant by cytoplasmic inheritance?  
14. What is pollen kit?
- Answer any three questions. Question No. 18 is compulsory.                      3 X 3
15. What are double fertilization and triple fusion.  
16. Differentiate incomplete dominance from co-dominance.  
17. What is Genetic map? Write any two functions.  
18. Draw and write shorts on PBR 322.  
19. What are the advantages of artificial seeds?
- Note : Answer all the questions.                      2 X 5
20. a) How will you avoid the growing the microbes in nutrient medium during culture process? What the techniques used to removed the microbes. (OR)  
b) Is there any possibilities to transfer a suitable desirable the gene to host plant without vector? your answer.  
a) When two different genes came from same parent they tend to remain together during inheritance  
i) What is the name of this phenomenon?      ii) Draw the cross with suitable.  
iii) Write the observed phenotypic ratio. (OR) b) With suitable diagram explain the structure of

SLQ 12 - ഉപദേശം (EM) 11

**PART - II (BIO - ZOOLOGY)**

**Note :** i) Answer all the questions. ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer. 8 X 1 = 8

1. In which type of parthenogenesis are only males produced?  
a) Arrhenotoky                      b) Thelytoky                      c) Amphitoky                      d) Both a and b
  2. Find the wrongly matched pair.  
a) Bleeding phase                      -                      fall in oestrogen and progesterone  
b) Follicular phase                      -                      Rise in oestrogen  
c) Luteal phase                      -                      Rise in FSH level  
d) Ovulatory phase                      -                      LH surge
  3. Three children of family have blood groups A, AB and B. What could be the genotypes of their parents?  
a)  $I^A I^A$  and  $I^B I^B$                       b)  $I^A I^O$  and  $I^B I^O$                       c)  $I^A I^A$  and  $I^A I^A$                       d)  $I^A I^A$  and  $I^B I^B$
  4. The total number of nitrogenous bases in human genome is estimated to be about  
a) 3.5 million                      b) 35000                      c) 35million                      d) 3.1 billion
  5. The metabolism of lactose in E.Coli does not require enzyme .....  
a) nuclease                      b) permease                      c)  $\beta$ -galactosidase                      d) Transacetylase
  6. Lippes loop is a ..... IUD.  
a) Copper releasing                      b) Hormone releasing                      c) Non medicated                      d) None of the above
  7. AIDS virus has  
a) single stranded RNA                      b) Double stranded RNA                      c) Single stranded DNA                      d) Double stranded DNA
- Who proposed the Germplasm theory?  
a) Darwin                      b) August weis man                      c) Lamarck                      d) Alfraag Wallace

**PART - II**

**Note :** Answer any four of the following questions.

4 X 2 = 8

- What is meant by surrogacy?
- What is pedigree analysis?
- What is known as paedogamy?
- Define Transcription?
- What do you know about coacervates?
- What are the symptoms of mental depression?

**PART - III**

**Note :** Answer any three of the following in which question No. 10 is compulsory.

3 X 3 = 9

- Why is the off spring formed by asexual reproduction referred as a clone?
- Mention the symptoms of Downs Syndrome.
- Mention any three main objections to Darwinism.
- Placenta is an endocrine tissue - Justify?
- State any three goals of the human genome project.

**PART - IV**

2 X 5 = 10

**Note :** Answer all the questions.

- a) Explain the various phases of menstrual cycle. (OR)
- b) Explain any five techniques of Assisted Reproductive Technology (ART)
- a) Explain the genetic basis of ABO blood grouping in man. (OR)                      b) Darwin's finches and Australian marsupials are suitable examples of adaptive radiation. Justify the statement.

SLQ 12 - 2000 (EM)                      2000 - 20