SECTION 'C' $4 \times 10 = 40$

Long Answer questions (Word limit 400-450 words.)

UNIT-I

Q. 1. Describe structure and function of Golgi complex.

OR

Give an account on structure & function of plasma membrane.

UNIT-II

Q. 2. Describe mechanism of initiation, elongation and termination in translation.

OR

What do you mean by replication? Describe mechanism of replication of DNA.

UNIT-III

Q. 3. What is blotting techniques? Describe its types.

OR

What are the properties of molecular markers? How they can be developed.

UNIT-IV

Q. 4. Write an essay on application of genetic engineering in agriculture.

OR

What are embryonic stem cells? Describe its properties and difference between embryonic and adult stem cells.

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ROLL NO.....

ZOO. 201/22

II SEMESTER EXAMINATION, 2022

M.Sc. (ZOOLOGY)

PAPER-I

MOLECULAR CELL BIOLOGY & BIOTECHNOLOGY

TIME: 3 HOURS **MAX.- 80**

MIN.- 16

Note: The question paper consists of three sections A, B & C. All questions are compulsory.
Section A- Attempt all multiple choice questions.
Section B- Attempt one question from each unit.
Section C- Attempt one question from each unit.

SECTION 'A' $2 \times 8 = 16$

MCQ (Multiple Choice Questions)

1. The Hydrophobic ends of phospholipid molecules are -

(a) Polar (b) Non-Polar

(c) Neutral (d) Bipolar

2. Golgi apparatus present in Invertebrates and plant cells are called as-

(a) Polysomes (b) Golgisomes

(c) Dictyosome (d) Cisternae

3. The number of chromatids present in metaphase chromosome is-

(a) Four (b) Three (c) Two (d) One

4. For the preparation of genetic maps, the recombination frequencies between genes are additive over short distance, but not over long distance due to -

(a) Multiple cross overs (b) Lethal mutations

(c) Epistasis (d) Synaptonemal complex

5. Which of the following is essential in PCR?

(a) Primer (b) Taq polymerse

(c) Desired DNA (d) All of the above

6. DNA microinjection into the egg has been used to produce which of the following transgenic animals?

(a) Pigs (b) Chicken

(c) Mice (d) All of these

7. The Genetic codon is a -

(a) Singlet (b) Duplet

(c) Triplet (d) Quadruplet

8. Which of the following cells have ability to give rise to specialised cell types and capable of renewing?

(a) Sertoli cells (b) Stem cells

(c) Laydig cells (d) B cells

SECTION 'B' $4 \times 6 = 24$

Short Answer Type Questions (Word limit 200-250 words.)

UNIT-I

Q. 1. Write a brief account on Polymorphism in Lysosome.

OR

Describe structure and function of microtubules.

UNIT-II

Q. 2. Describe mechanism of transcription in prokaryotic cells.

OR

What is Genetic code? Describe properties and importance of Genetic code.

UNIT-III

Q. 3. Define chromosome. Describe chemical composition and structural organization of chromosome.

OR

What are the application of genetic mapping.

UNIT-IV

Q. 4. Define transgenesis. How transgenic animals proved to be beneficial for humans. Discuss.

OR

Give an account on importance of genetic engineering.