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(July)

ZOOLOGY

(Elective/Honours)

(Cell Biology and Genetics)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer Question No. **1** and *any four* from the rest

1. Answer any *three* of the following questions :

4×3=12

- (a) Elaborate the different functions of plasma membrane.
- (b) Write down the chemical composition of chromatin.
- (c) Discuss the organs of immune system.
- (d) Explain codominance with example.
- (e) Explain the terms 'euploidy' and 'anaeuploidy' with examples.

2. Give an account of the structure of ribosome. Write down the important functions of ribosome.

7+4=11

3. Write an account of the structure of nuclear envelope with the help of suitable diagrams. Discuss the functions of nuclear envelope.

6+5=11

4. (a) Give a brief account of synaptonemal complex with the help of diagram.

7

(b) Write a note on common carcinogens.

4

5. (a) Explain the chromosomal theory of inheritance with suitable examples.

6

(b) Write a note on in-complete dominance with suitable cross.

5

6. (a) What is genic balance theory? Explain sex-determination in *Drosophila* with reference to genic balance theory.

1+6=7

(b) Discuss about the structural chromosomal aberrations.

4

7. (a) Give an account of the morphology of chromosomes. Classify chromosomes based on the position of centromere.

4+3=7

(b) Write down the functions of microtubules.

4

(3)

8. Write short notes on any *two* of the following : $5\frac{1}{2} \times 2 = 11$

- (a) Functions of endoplasmic reticulum
- (b) Differences between mitosis and meiosis
- (c) Sickle cell anaemia
- (d) Lysosome

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