2025

(Nov–Dec)

FYUP : 3rd Semester Examination

MAJOR

ZOOLOGY

(Introductory Cell Biology and Genetics)

ZOO–200

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer Question No. **1**, which is compulsory and *any* **four** from the rest

1. Write on any *four* of the following : 3×4=12

(a) Functions of plasma membrane

(b) Functions of ribosomes

(c) Structure of polytene chromosome

(d) Significance of meiosis

(e) Types of linkage

(f) Multiple alleles

2. Elaborate on the relationship between mitochondrial structure and function. 6+5=11

3. Describe the overall structure and functions of the nuclear membrane. 6+5=11

4. *(a)* Explain the organization of chromatin within the eukaryotic nucleus. 7

(b) Differentiate between euchromatin and heterochromatin. 4

5. Discuss the characteristics of cancer cell. Classify cancer by tissue origin. 5+6=11

6. *(a)* Give reasons why pea plants were an ideal choice for Mendel's experiments. 4

(b) Explain how Mendel conducted his monohybrid and dihybrid crosses, with examples. 3½+3½=7

7. How is sex determined in animals? Discuss the chromosomal and environmental factors of sex determination in animals. 2+4½+4½=11

(Continued)

8. Write short notes on any *two* of the following : 5½×2=11

(a) Euploidy and aneuploidy

(b) Endoplasmic reticulum

(c) Lampbrush chromosome

(d) Chromosomal theory of inheritance

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