

3/ZOO-200 (Th) Syllabus-2023

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(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 : $3 \times 4 = 12$

- (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)

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. $3\frac{1}{2}+3\frac{1}{2}=7$
7. How is sex determined in animals? Discuss the chromosomal and environmental factors of sex determination in animals. $2+4\frac{1}{2}+4\frac{1}{2}=11$

(3)

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

- (a) Euploidy and aneuploidy
- (b) Endoplasmic reticulum
- (c) Lampbrush chromosome
- (d) Chromosomal theory of inheritance
