

6/ZOO-351(Th) Syllabus-2023

2026

(May-June)

FYUP : 6th Semester Examination

ZOOLOGY

(Cell Biology and Genetics)

(ZOO-351)

(Theory)

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. Write notes on any four of the following :

3×4=12

- (a) Differences between endocytosis and exocytosis
- (b) Mechanism of crossing over
- (c) Phenylketonuria
- (d) Non-disjunction in *Drosophila*
- (e) Programmed cell death
- (f) Polygenic traits

26D/1851

(Turn Over)

2. Name the organelles which constitute the endomembrane system. Describe the conveyance of proteins carried out by this system. 1+10=11
3. Discuss the regulation of the cell cycle highlighting the roles played by cyclins and cyclin-dependent kinases. 11
4. Describe the classical methods of detection of mutation in *Drosophila*. $5\frac{1}{2}+5\frac{1}{2}=11$
5. What is sex-linked inheritance? Explain how red-green colour blindness in man is an example of sex linkage in human beings. $3+8=11$
6. (a) Write a note on chemical mutagens. 5
 - (b) A woman who is a carrier for haemophilia marries a normal man.
 - (i) Write the genotype of the parents. 1
 - (ii) Draw a Punnett square for the cross. 2
 - (iii) Find the probability of : 3
 1. A haemophilic son
 2. A carrier daughter
 3. A normal son
 4. A normal (non-carrier) daughter

7. What are transposable elements? Write a note on the different types of transposable elements (TEs) based on the mechanism of transposition. 3+8=11
8. Write short notes on any two of the following : 5½×2=11
- (a) Structure and function of synaptonemal complex
 - (b) Dosage compensation and Lyon's hypothesis
 - (c) Kappa particles in *Paramecium* as an example of extranuclear inheritance
 - (d) Sex determination in man
