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ZOOLOGY

( Major )

Paper : 3.1

Time : 3 hours

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

*Candidates **eligible** for Internal Assessment shall  
answer from PART—I only ( Marks : 90 )*

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*Candidates **not eligible** for Internal Assessment shall  
answer both from PART—I and PART—II ( Marks : 100 )*

PART—I

( Marks : 90 )

1. Answer any one of the following : 20

(a) Describe the different ultrastructural forms of Golgi apparatus. Explain the secretory role of Golgi apparatus.

10+10=20

(b) What is mitotic apparatus? Describe the role of mitotic apparatus in cell division.

5+15=20

(c) What is staining? Describe the principles of staining with reference to different types of stains used in the study of cells.  $3+17=20$

2. Describe the classification of enzymes. Write a note on the mechanism of enzyme kinetics. Write briefly on the role of coenzymes.  $8+10+2=20$

Or

Discuss the assembly of plasma membrane and ribosome.  $10+10=20$

3. Write briefly on (any two) :  $10 \times 2 = 20$
- (a) Mitochondrial DNA
  - (b) Human karyotypes
  - (c) Cytogenetic effect of ionising radiation on living organism
  - (d) Regulation of protein synthesis

4. What do you mean by thermodynamics? Discuss the second law of thermodynamics in relation to biological study.  $5+10=15$

Or

What is oxidative phosphorylation? Give an account on the theories of oxidative phosphorylation.  $3+12=15$

5. Write notes on any *two* of the following :  
7½×2=15
- (a) Cell-mediated immunity
  - (b) Structure and function of antibody
  - (c) Autoimmunity

PART—II

( Marks : 10 )

( In lieu of Internal Assessment )

6. Describe the ultrastructure and function of endoplasmic reticulum. 10

Or

Write short notes on any *two* of the following : 5×2=10

- (a) Nuclear pore complex
- (b)  $\beta$ -oxidation of fatty acid
- (c) Regulation of gene expression
- (d) Vaccination

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