

3/ZOO-201 (Th) Syllabus-2023

2024

(December)

FYUP : 3rd Semester Examination

MAJOR

ZOOLOGY

**(Introductory Biochemistry and
Immunology)**

ZOO-201

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 *three* of the following :

4×3=12

- (a) Characteristics of antigen
- (b) Phenylketonuria
- (c) Saturated and unsaturated fatty acids

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(Turn Over)

- (d) Types and functions of fat-soluble vitamins
- (e) Difference between catabolism and anabolism
2. With the help of a diagram, describe the structure of an IgG molecule. Briefly describe the functional role of the different classes of immunoglobulins. 6+5=11
3. (a) What do you understand by adaptive immunity? Discuss the features of adaptive immunity in a mammalian system. 2+5=7
- (b) Differentiate between active and passive immunity. 4
4. Explain the mechanism of enzyme action. Describe the various factors that can affect enzyme activity. 6+5=11
5. (a) Define pH and buffer. Explain with examples how a buffer resists changes in pH of a solution when an alkali or an acid is added separately to the solution. 2+5=7
- (b) (i) Write the steps to prepare 10 ml of 0.1 N HCl. 2
- (ii) What is 1 molar of NaOH? 2

6. (a) Discuss simple and conjugate proteins with proper examples. 6
- (b) Discuss the physiological importance of essential and non-essential amino acids. 5
7. (a) With examples, explain reducing and non-reducing sugars. 4
- (b) What are carbohydrates? Describe the Fischer-Haworth projections of glucose and fructose with illustrations. 1+6=7
8. Write short notes on any *two* of the following : $5\frac{1}{2} \times 2 = 11$
- (a) Cytokines
- (b) Structure of DNA
- (c) Properties of enzymes
- (d) Chemical structure of DNA and RNA

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