

3/ZOO-201 (Th) Syllabus-2023

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(Nov-Dec)

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** which is compulsory and
any four from the rest

1. Write notes on any *four* of the following :

3×4=12

(a) Anomers

(b) Active sites of enzymes

(c) Key features of adaptive immunity

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(Turn Over)

(2)

- (d) Significance of essential and non-essential amino acids
 - (e) Biological functions of IgG
 - (f) van der Waals' electrostatic interactions
2. Explain the properties of enzymes. Classify enzymes on the basis of the reactions they catalyse and give one example for each class.
5+6=11
3. What is an MHC? Describe the structure and functions of MHC Class I and Class II with the help of suitable diagrams. 1+4+4+2=11
4. (a) Define acid and base with examples. Derive the Henderson-Hasselbalch equation. 3+5=8
- (b) How will you prepare 20 ml of 0.1 N H_2SO_4 from concentrated sulphuric acid? (~ 18 M, ~ 36 N). 3
5. (a) Write an account on the classification of lipids with suitable examples. 5
- (b) Describe the structure and functions of phospholipids. 3+3=6

(3)

6. (a) Explain antigen-antibody reactions, highlighting the principles and applications of precipitation and agglutination reactions. $4+4=8$
- (b) Differentiate between antigenicity and immunogenicity. 3
7. (a) With suitable examples, describe glycosidic linkage in disaccharides. 6
- (b) Differentiate between simple and conjugate proteins. 5
8. Write short notes on any *two* of the following : $5\frac{1}{2}\times 2=11$
- (a) Hematopoiesis
- (b) Ribozymes
- (c) Factors that contribute to the stability of the structure of the DNA
- (d) Types of vitamins
