

2019

B.Sc.

3rd Semester Examination
CHEMISTRY (Honours)
Paper - SEC 1-T

Full Marks : 25

Time : 2 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.
Illustrate the answers wherever necessary.*

Analytical Clinical Biochemistry

Group - A

1. Answer any *three* questions : 3×2=6
- (a) State the factors that can lead to protein denaturation.
 - (b) What do you mean by biocatalyst ?
 - (c) What is Glycolysis ?

[Turn Over]

(d) Fill in the blanks

Proteins are _____ made of amino acid
_____.

(e) Define lypoprotein.

Group - B

2. Answer any *two* questions : 2×5=10

(a) Write down the important characteristics of Watson Crick model of DNA. What are the monomers of lipids ? 4+1=5

(b) What is alpha helix and β -pleated sheet ? State with reason which one is more stable between alpha helix and beta pleated sheet ? 3+2=5

(c) What do you mean by the terms 'Transcription' and 'translation' ? What is the secondary structure of a protein ? 3+2=5

Group - C

3. Answer any *one* question : 1×9 = 9

(a) Write down the process of urine formation. What is the composition and function of the blood ? What do you mean by blood coagulation ? 5+2+2

(3)

- (b) Discuss the influence of pH and temperature on enzyme activity.

Define 'Coenzymes' and Enzyme inhibition with example.

How many ATP molecules are produced in Krebs Cycle ? 4+4+1=9

[Turn Over]

Pharmaceutical Chemistry

Full Marks : 25

Time : 2 Hours

Group - A

1. Answer any *three* questions : [3×2=6]
- (a) Write the chemical name of paracetamol and Dapsone. 2
- (b) Draw the stereochemical structure of
- (i) Chloromphenicol antibiotic and
- (ii) Phenobarbital. 1+1
- (c) Write down the medicinal uses of Aspirin. 2
- (d) What is the difference between aerobic and anaerobic fermentation? 2
- (e) What is the raw material used for the fermentation of ethyl alcohol? 2

Group - B

2. Answer any *two* questions : [2×5 = 10]
- (a) Write down the procedure for the synthesis of paracetamol. What is the side effect of AZT-Zidovudine? 4+1

- (b) Draw the retrosynthetic analysis and forward synthesis method of Acyclovir (antiviral agent). Write down the name of the major micro-organism used for the synthesis of Glutamic acid
4+1
- (c) Name the micro-organisms for the production of Citric acid.

Draw the structures of Ibuprofen and Diazepam.
3+2

Group – C

3. Answer any *one* question : [1×9 = 9]

- (a) Draw the flow sheet diagram for the large scale production of Penicillin. Give the medicinal use of trimethoprim and draw its structure. Write the properties of a useful microbe. 5+2+2
- (b) Write down the steps for the separation and purification of glutamic acid.

Write the Batch fermentation procedure for the industrial production of Glutamic acid. Discuss the upstream processing of vitamin B2.

3+3+3