



SN – 298

III Semester B.Sc. Examination, Nov./Dec. 2014

(Semester Scheme) (F + R)

BIOTECHNOLOGY – III

Biochemistry and Biophysics (BTP – 301)

70 – 2012-13 and Onwards

60 – Prior to 2012-13

Time : 3 Hours

Max. Marks : 70/60

- Instructions :**
- 1) Part I and Part II must be answered in **separate** booklets.
 - 2) Part I Section D is **compulsory** for students of batch 2012-13 onwards.
 - 3) Part II Section C is **compulsory** for students of batch 2012-13 onwards.
 - 4) 70 marks for students of 2012-13 onwards.
 - 5) 60 marks for repeater students prior to 2012-13.
 - 6) Draw the structures and **neat** labelled diagrams **wherever** necessary.

PART – I

(Biochemistry)

SECTION – A

I. Write short notes on :

(4x2=8)

- 1) Sanger's reagent
- 2) Anomers
- 3) Coenzymes
- 4) Progesterone.

SECTION – B

II. Answer any two of the following :

(2x6=12)

- 5) Explain the acidic and basic properties of amino acids.
- 6) Explain the interactions which stabilise the tertiary structure of a protein.
- 7) Name the water soluble vitamins with one deficiency symptoms for each.

P.T.O.

SN - 298



SECTION - C

III. Answer any two of the following : (2×10=20)

- 8) What are polysaccharides ? Explain the structure of a storage and a structural polysaccharide.
- 9) Mention the different classes of enzymes. Give one example for each class.
- 10) Explain the properties of lipids and add a note on saponification and rancidity.

SECTION - D

IV. Answer the following : (5×1=5)

- 11) Name an aromatic amino acid.
- 12) Write the Haworth projection of lactose.
- 13) Give two examples of essential fatty acids.
- 14) Name two fibrous proteins.
- 15) Which vitamin deficiency is associated with Rickets ?

PART - II

(Biophysics)

SECTION - A

I. Answer any two of the following : (2×5=10)

- 1) Explain the biologically important buffers.
- 2) Give a brief account of TLC.
- 3) Explain fluorescence spectroscopy. Discuss its applications.

SECTION - B

II. Answer any one of the following : (1×10=10)

- 4) What are radioisotopes ? Describe methods to measure radioactivity.
- 5) Explain different types of chemical bonds.

SECTION - C

III. Answer the following : (5×1=5)

- 6) Name an extrinsic fluorescence compound.
- 7) Expand NMR.
- 8) Write Gibb's equation.
- 9) What is the unit of sedimentation coefficient ?
- 10) Write Henderson-Hasselbalch equation.