This question paper contains **3** printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **93**

Unique Paper Code : **217567** **G**

Name of the Paper : **Analytical Chemistry—5, Analytical Biochemistry (ACPT-505)**

Name of the Course : **B.Sc. (P) Applied Physical Sciences-Analytical Chemistry**

Semester : **V**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *five* questions.

All questions carry equal marks.

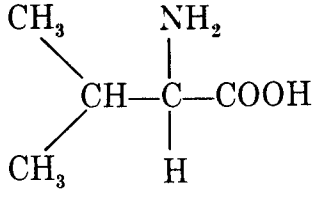
1. (*a*) What are homopolysaccharides ? Give the structure and function of cellulose.

   (*b*) Name the different lipoproteins found in plasma. How are they classified ? What are their functional roles ?

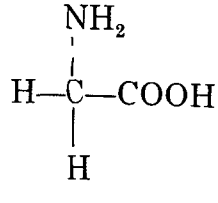
   (*c*) Define iodine number of a fat. What is the significance of the iodine number ? How can you determine the iodine number of a given fat in the laboratory ? 15

2. (*a*) What are metalloproteins ? Give *two* examples.

   (*b*) With the help of a flow chart describe the systematic synthesis of the dipeptide Valine-Glycine (Val-Gly) starting from amino acids Valine and Glycine.



Valine



Glycine

P.T.O.

(*c*) Describe the Edmund's method for determination of N-terminal of amino acids.

4+6+5

3. (*a*) Why do we get a sigmoid curve when we plot substrate concentration [S] *Vs.* velocity for an allosteric enzyme ?

(*b*) What cellular functions do carbohydrates perform ? Describe briefly.

(*c*) Briefly describe the structure of phospholipids. 5+5+5

4. (*a*) Define anemia. What are the different causes of Iron Deficiency Anemia ? Describe.

(*b*) Give a diagrammatic representation of the intrinsic pathway of blood clotting.

(*c*) Describe the methods of preservation of blood. 5+5+5

5. (*a*) Give the principle of the Libermann-Burchard reaction for the estimation of cholesterol. What are the factors that affect colour formation in the Liebermann-Burchard method ?

(*b*) Why is it necessary to add sodium fluoride at the time of collection of blood for the estimation of blood glucose ? Describe the 'clinitest' for estimation of glucose in urine.

(*c*) What are Bence Jone's proteins ? Describe a method for the estimation of Bence Jone's proteins.

5+5+5

6. (*a*) What is general amino aciduria ? How are they classified ? Describe a method of estimation of amino acids in urine.

(*b*) What is the pH of blood ? Describe in detail how the pH of blood is maintained.

(*c*) What is jaundice ? Discuss the causes of hemolytic jaundice. 5+5+5

7. Write short notes on any *three* of the following :

(*a*) Obstructive jaundice

(*b*) Erythrocyte sedimentation rate

(*c*) Physical properties of urine

(*d*) Trinder's method for estimation of blood glucose

(*e*) Van den Bergh reaction. 5×3