

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)
Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION NOVEMBER – 2016

M.Sc. Biotechnology

16PBTCC02 - BASIC BIOCHEMISTRY

Duration of Exam – 3 hrs

Semester – I

Max. Marks – 70

Part A (5x2= 10 marks)

Answer **ALL** questions

1. How pH affect enzyme activity?
2. What are the products when amylose and amylopectin are hydrolysed by amylase?
3. Replacement of glutamic acid by valine at 6th position in α -chain of haemoglobin changes the shape of haemoglobin into sickle shape .Why?
4. Write the mechanism of action of Aspirin?
5. Define super helical density?

Part B (5X5 = 25 marks)

Answer **ALL** questions

- 6a. How many millilitres of 5.5 M NaOH are required to prepare 400 mL of 1.5M NaOH?
OR
- 6b. What is Resonance? Explain the phenomenon of resonance in any two biological molecules?
- 7a. With suitable example of each, explain the epimer and anomer in carbohydrate?
OR
- 7b. Briefly explain the lectin-carbohydrate interaction?
- 8a. Write the name of five biologically important derived amino acid with their structure and function?
OR
- 8b. Write short notes on any two in brief-a).Lipoprotein b).Metalloprotein c).Nucleoprotein ?
- 9a. What is structure and two function of sphingomyelin? How it differ from sphingosine?
OR
- 9b. What is fluidity? Describe about the name of four factors which affects the fluidity of lipid?

10a Briefly explain super coiling?

OR

10b With the help of structure of pentose sugar in nucleotide explain the sugar pucker?

Part C (5X7 = 35 marks)

Answer **ALL** questions

11a. Describe detail account of H-bonding? Write the four example of Biological structure where H-bonding predominates?

OR

11b. What is PKa value? With the help of Henderson–Hasselbalch equation how we may estimate the pH of a buffer solution and finding the equilibrium pH in acid-base reactions ?

12a. What is Transpeptidation? Give the detail account of Bacterial cell wall polysaccharide?

OR

12b. Give the structure and function of Hyaluronic acid and Heparin?

13a. Give the detail structure of Myoglobin? Write four differences between Myoglobin and Hemoglobin?

OR

13b. What is the significance of protein sequencing? Explain the any one method for sequencing of protein?

14a Draw the structure of cholesterol? How cholesterol is involved in maintain the integrity of membrane? Enlist the five cholesterol derived molecule?

OR

14b What is glycerophospholipid? Give the structure and importance of lecithin and cephalin?

15a Explain the non-watsonian (unusual) H-boning in DNA? Write the four difference between B-form and Z-form of DNA?

OR

15b Enumerate the detail about Mitochondrial Genome?