



# Shree H.N.Shukla College of Science Rajkot

B.Sc. [Sem- 3]

## Biochemistry prelims Paper – 2019]

DATE: 12/10/2017

Time: 9:30 – 12:00

Total marks- 70

**Q-1(a) Objective type questions:** (4)

1. Give two examples of triose monosaccharides.
2. What are heteropolysaccharides ?
3. What is mutarotation?
4. Write the name of the most common sialic acid.

**Q-1(b) Answer any one of the following questions in brief:** (2)

1. What are epimers?
2. Explain dehydration reactions of saccharides.

**Q-1(c) Answer any one of the following questions in detail:** (3)

1. Write a short note on blood group polysaccharides.
2. Write a short note on chitin.

**Q-1(d) Write short notes on:** (5)

1. Explain tautomerization, oxidation, reduction and osazone formation reactions of sugars.
2. Describe the structure and biological importance of starch, glycogen and cellulose.

**Q-2(a) Objective type questions:** (4)

1. What suffix is used in the nomenclature of unsaturated fatty acids?
2. What is saponification?
3. Which enzymes have the ability to hydrolyse triacylglycerols?
4. Name any two essential fatty acids.

**Q-2(b) Answer any one of the following questions in brief:** (2)

1. Write a short note on simple lipids.
2. Explain rancidity of fats and oils.

**Q-2(c) Answer any one of the following questions in detail:** (3)

1. Write a note on glycolipids.
2. Describe the structure and occurrence of sphingomyelins.

**Q-2(d) Write short notes on:** (5)

1. Describe the type, structure and properties of glycerophospholipids.
2. Describe the structure and importance of any two important steroids.

**Q-3(a) Objective type questions:** (4)

1. What is meant by isoelectric pH.
2. What is meant by denaturation of proteins.
3. Name any two amino acids containing sulfur atoms.
4. What is meant by salting out of proteins.

**Q-3(b) Answer any one of the following questions in brief:** (2)

1. Describe the structure and functions of myoglobin.
2. Describe the types and functions of fibrous proteins.

**Q-3(c) Answer any one of the following questions in detail:** (3)

1. What is protein denaturation? Enlist different agents used for it.
2. Give the physical properties of amino acids.

**Q-3(d) Write short notes on:** (5)

1. Explain the sanger and edman method for the determination of amino acid sequence in primary structure of proteins.
2. Give chemical properties of amino acids.

**Q-4(a) Objective type questions:** (4)

1. How many chromosomes are present in humans?
2. Name the sugar present in DNA.
3. Which bonds do not denature in the denaturation process of DNA ?
4. Name all the bases present in DNA.

**Q-4(b) Answer any one of the following questions in brief:** (2)

1. Write a short note on type of DNA.
2. Describe the feature of DNA double helix.

**Q-4(c) Answer any one of the following questions in detail:** (3)

1. Differentiate between DNA and RNA.
2. Write a note on the denaturation and re-naturation process of DNA.

**Q-4(d) Write short notes on:** (5)

1. Write a detailed note on types of RNA.
2. Describe gene, genome and chromosome.

**Q-5(a) Objective type questions:** (4)

1. Define porphyrins.
2. Name all the fat soluble vitamins.
3. Name the vitamin that helps in blood clotting.
4. Name the two important bile pigments.

**Q-5(b) Answer any one of the following questions in brief:** (2)

1. Describe the deficiency symptoms of vitamin A.
2. Describe the biological significance of vitamin D.

**Q-5(c) Answer any one of the following questions in detail:** (3)

1. Write a note on all important metalloporphyrins occurring in nature.
2. Write a note on classification of porphyrins.

**Q-5(d) Write short notes on:** (5)

1. Describe the chemical nature and physiological significance of bile pigments.
  2. Describe the biological significance and deficiency symptoms of vitamin C.
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