

SARDAR PATEL UNIVERSITY EXAMINATION

DATE – 10/04/19 DAY- Wednesday TIME 10:00-01:00 p.m.

Course- US04CBNF02 SUBJECT: Bioinformatics

CLASS- S.Y.B.Sc IVSem TITLE- BIOCHEMISTRY

MAX. MARKS: 70

Q1- Answer the following Multiple Choice Questions: [10]

- i) Which of the following intermediates is not involved in glycolysis but is in gluconeogenesis?
a) fructose 6-phosphate b) pyruvate c) oxaloacetate d) acetyl CoA
- ii) An example of a saturated fatty acid is
a) Palmitic acid b) Oleic acid c) Linoleic acid d) Erucic acid
- iii) A fatty acid which is not synthesized in the body and has to be supplied in the diet is
a) Palmitic acid b) Lauric acid c) Linolenic acid d) Palmitoleic acid
- iv) How many turns of the fatty acid spiral are needed to "process" a C_{14} fatty acid molecule?
a) six b) seven c) twelve d) fourteen
- v) How many $FADH_2$ and $NADH$ molecules are produced, respectively, during one turn of the fatty acid cycle?
a) 1, 1 b) 1, 2 c) 2, 1 d) 1, 3
- vi) Which of the following lipids forms a bilayer between two watery regions, such as in the plasma membrane of a cell?
a) steroids b) neutral fats c) waxes d) phospholipids
- vii) Maltose is composed of which two sugars?
a) Glucose and Glucose c) Glucose and Fructose
b) Glucose and Galactose d) Fructose and Galactose
- viii) Cane sugar is known as
a) Galactose (B) Sucrose (C) Fructose (D) Maltose
- ix) Epimers of glucose is
a) Fructose (B) Galactose (C) Ribose (D) Deoxyribose
- x) Which of following is an anomeric pair?
a) D-glucose and L-glucose c) D-glucose and D-fructose
b) α -D-glucose and β -D-glucose d) α -D-glucose and β -L-glucose

Q2- ANSWER IN BRIEF (Attempt any 10) (each carry 2 marks)

[20]

- i) Explain Anaerobic respiration.
- ii) Differentiate reducing and non-reducing sugar.
- iii) Give the structure of Glucose, fructose and galactose.
- iv) How much ATP is release in glycolysis during aerobic and anaerobic conditions.
- v) Differentiate homopolysaccaride and hetropolysaccaride with example.
- vi) How essential fatty acid differ from non essential fatty acids.
- vii) Name any 4 fatty acids.
- viii) Differentiate between saturated and unsaturated fatty acid.
- ix) Write any 4 biological roles of lipid.
- x) What are sterols? Give an example.
- xi) Give the structure of palmitic acid and stearic acid.
- xii) Differentiate Glycolipids and Phospholipids.

Q3 i) Explain tautomerization and dehydration reactions of Monosachharides. [05]

Q3 ii) Write a short note on starch. [05]

OR

Q3 Discuss important structures, properties and importance of disaccharides. [10]

Q4 Explain Glycolysis and its significance in metabolism in detail. [10]

OR

Q4 Write a short note on following: Cori cycle & Glycogenesis. [10]

Q5 (a) Draw the basic structure of fatty acid with two examples. [05]

Q5 (b) What are derived Lipids? Classify. [05]

OR

Q5 Explain the properties, structure and significance of phospholipids and glycolipids in detail. [10]

Q6 a) Describe the formation of Ketone bodies. [06]

b) Describe the basic idea of Fatty acid Biosynthesis. [04]

OR

Q6- Explain β oxidation of fatty acid in detail. [10]

— X —
(2)