Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF APPLIED SCIENCE

B.Sc. Winter 2018-19 Examination

Semester: 2 **Date: 12/12/2018**
Subject Code: 11103152 **Time: 10.30 To 1.00**
Subject Name: Metabolism I **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) **(08)**
(a) Describe glycolysis pathway and its regulation.

Q.1. B) Answer the following questions (Any two)
(a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) **(04)**
1. Name the purine nitrogen bases and draw their structures
2. Draw Glyoxylate pathway

(b) Short note on Pyrimidine biosynthesis **(04)**
(c) Describe the components that make the nucleotides? **(04)**

Q.2. A) Answer the following questions.
(a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) **(04)**
1. Glycogenesis occurs in _____.
2. Net ATP synthesized during glycolysis in aerobic condition is _____

(b) Short note on Glycogen synthesis **(04)**

Q.2. B) Answer the following questions (Any two)
(a) Short note/ Multiple choice questions. (Each of 01 marks) **(03)**
1. TCA cycle is regarded as amphibolic in nature because

A. It has both catabolic and anabolic reactions
B. It has only catabolic reactions
C. It has only anabolic reactions
D. First three reactions are anabolic and rest reactions are catabolic

2. _____ is a metabolic disease associated with over production of Uric acid.

A. Cancer
B. Gout
C. Diabetes
D. Anemia

3. _____ is a storage form of glucose in animals.

A. Glycogen
B. Starch
C. Fatty acid
D. Both A and B

(b) Describe Oxidative phosphorylation **(03)**
(c) Short note on synthesis of ketone bodies **(03)**

Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) **(08)**
(a) Explain Citric acid cycle in detail

Q.3. B) Answer the following questions (Any two)
(a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) **(04)**
1. Explain Electron transport chain
2. List two steroid hormones synthesized from cholesterol

(b) Draw pathway for beta oxidation of palmitic acid along with metabolites and enzymes. **(04)**
(c) Short note: fatty acid biosynthesis **(04)**

Q.4. A) Answer the following questions.
(a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) **(04)**
1. Acetyl Co A from mitochondria is transported into cytosol after its conversion to _____ for fatty acid biosynthesis.
2. _____ is a rate limiting step of cholesterol biosynthesis.

(b) Short note on Urea cycle **(04)**

Q.4. B) Answer the following questions (Any two)
(a) Short note/ Multiple choice questions. (Each of 01 marks) **(03)**
1. ._____ is not a ketone body.

A. Acetone
B. Acyl CoA
C. Acetoacetate
β-Hydroxy butyrate

2. A specialized system for transport of activated fatty acids from cytosol to mitochondria is_____.

A. Citrate shuttle
B. Carnitine shuttle
C. Malate shuttle
D. Pyruvate shuttle

3. _____ is the net yield of ATP from oxidation of one molecule of palmitate.

A. 129
B. 96
C. 140
D. 131

(b) Draw pathway for Purine biosynthesis **(03)**

(c) Short note onGS/GOGAT pathway **(03)**