Seat No:_____ Enrollment No:_____

PARUL UNIVERSITY

FACULTY OF APPLIED SCIENCE

B.Sc. Supplementary, Winter 2017-18 Examination

Semester: 2 **Date: 05/01/2018**
Subject Code: 11103152 **Time: 10.30 am to 1.00 pm**
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 **(08)**
(a) Citric acid cycle. Mention location, reactions of citric acid cycle and energetics.

Q.1. B) Answer the following questions (Any two)
(a) Brief note (2x2) (Each of 02 marks) **(04)**
1. Define anaplerosis.
2. State any two importance of gluconeogenesis.
(b) Short note: Mitochondrial electron transport chain **(04)**
(c) Short note: List any four Inhibitors of oxidative phosphorylation along with its site of action. **(04)**

Q.2. A) Answer the following questions.
(a) Fill in the blanks. (Each of 02 marks) **(04)**
1. A specialized _____carrier system / shuttle operates to transport activated fatty acids from cytosol to the mitochondria. _____is an inhibitor of this shuttle.
2. Cholesterol is a precursor of _____ acids and _____ hormones.
(b) Short note: Biosynthesis of fatty acids **(04)**

Q.2. B) Answer the following questions (Any two)
(a) Multiple choice questions. (Each of 01 marks) **(03)**
1. _____is not a ketone body.
a) acetone
b) β-hydroxybutyrate
c) acetoacetate
d) acetyl CoA
2. Refsum's disease is caused by a defect in the _____.
a) alpha oxidation
b) beta oxidation
c) omega oxidation
d) all of the above
3. Cholesterol is found exclusively in _____.
a) plants
b) animals
c) microorganisms
d) algae
(b) Short note: Energetics of beta oxidation of palmitic acid. **(03)**
(c) Short note: Cholesterol synthesis **(03)**

Q.3. A) Essay type **(08)**
(a) Transamination

Q.3. B) Answer the following questions (Any two)
(a) Definition with appropriate two examples (Each of 02 marks) **(04)**
1. Ketogenic amino acids
2. Glucogenic amino acids
(b) Short note: Sources of amino acid pool. **(04)**
(c) Short note: Urea cycle (structure not needed) **(04)**

Q.4. A) Answer the following questions.
(a) Fill in the blanks. (Each of 02 marks) **(04)**
1.Inosine monophosphate is the intermediate precursor for the formation of _____and _____.
2. Conversion of ribonucleotides to deoxyribonucleotides by removal of carbon at _____ position of ribose is catalyzed by _____ enzyme.

(b) Draw a purine ring and label the sources of each atoms in purine ring. **(04)**

Q.4. B) Answer the following questions (Any two)

(a) Multiple choice questions. (Each of 01 marks) **(03)**

1. _____ catalyses the formation of AMP from adenine.
   a) Hypoxanthine phosphoribosyl transferase
   b) Adenine kinase
   c) Adenine phosphoribosyl transferase
   d) Adenine phosphatase
2. _____is the regulatory enzyme of pyrimidine synthesis in animals.
   a) Hypoxanthine phosphoribosyl transferase
   b) Aspartate transcarbamoylase (ATCase)
   c) Guanine phosphoribosyl transferase
   d) Carbamoyl phosphate synthetase II
3. _____ is essential for the synthesis of purine nucleotides.
   a) Folic acid (THF)
   b) Sulphonamides
   c) Methotrexate
   d) All of the above

(b) Short note: Regulation of purine nucleotide biosynthesis **(03)**

(c) Short note: Degradation of purine nucleotides to uric acids. **(03)**