

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Winter 2019-20 Examination**

**Semester: 2**  
**Subject Code: 11203153**  
**Subject Name: Biochemical pathways and metabolism**

**Date: 13/12/2019**  
**Time: 02:00 pm to 04:30 pm**  
**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 (Each of 04 marks) (08)**  
 (a) Discuss any two inborn errors of amino acid metabolism  
 (b) Explain Beta oxidation of fatty acids
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note (Each of 02 marks)  
 1. Explain substrate level phosphorylation  
 2. Enlist two ketogenic amino acids.  
 (b) Short note on formation of ketone bodies and their utilization (04)  
 (c) Short note on formation of prostaglandins (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Fill in the blanks. (Each of 02 marks)  
 1. Fats are stored in \_\_\_\_ tissue  
 2. Krebs cycle occurs in \_\_\_\_\_.  
 (b) Short note on regulation of phosphofructokinase-1 (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Short note (Each of 01 marks)  
 1. Define glucogenic amino acids  
 2. Define ketogenic amino acids  
 3. Give symptoms of orotic aciduria  
 (b) Short note on glycogen pathway regulation (03)  
 (c) Short note on significance of HMP Shunt (03)
- Q.3. A) Essay type (Each of 04 marks) (08)**  
 (a) Explain ribonucleotide synthesis  
 (b) Explain formation of urea.
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Short note (Each of 02 marks)  
 1. Explain CTP formation from UTP  
 2. Explain UTP formation from UMP  
 (b) Short note on pyruvate dehydrogenase complex (04)  
 (c) Short note on metabolism of fructose (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Fill in the blanks. (Each of 02 marks)  
 1. Animals which excrete ammonia as waste product are called as \_\_\_\_\_ animals  
 2. The conversion of fructose-1,6-bis phosphate to glyceraldehyde-3-phosphate is catalyzed by \_\_\_\_\_.  
 (b) Short note on gluconeogenesis (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Multiple choice questions. (Each of 01 marks) (03)  
 1. HMP shunt is also called as \_\_\_\_  
 a) Pentose phosphate pathway      c) both a and b  
 b) Phosphogluconate pathway      d) none of the above  
 2. Deficiency in homogentisic acid dioxygenase results in \_\_\_\_\_.  
 a) Alkaptonuria      c) anaemia  
 b) Phenylketonuria      d) beri beri  
 3. GTP is formed in  
 a) Glycolysis      c) Krebs cycle  
 b) HMP shunt      d) all of the above  
 (b) Short note on inhibitors of nucleic acid biosynthesis (03)  
 (c) Short note on degradation of heme (03)