Seat No: _____ Enrollment No:_____

PARUL UNIVERSITY

FACULTY OF MEDICINE

M.B.B.S, September-2018 Examination

Year: 1 **Date: 08/10/2018**

Subject Code: 19100106 **Time: 10:30 am to 01:00 pm**

Subject Name: Biochemistry Paper-II **Total Marks: 50**

Instructions:

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write Section-'A", Section "B", Section "C" on separate answer sheets

SECTION – A

Q.1 Structured Essay **(10)**

What is normal Blood Urea level? How is urea synthesized in the body (Urea Cycle)? How it is linked to TCA cycle. Add a note on the inborn errors associated with the urea synthesis (1+4+2+3)

Q.2 Write short notes on: (any two out of three) **(08)**

1. Free radicals and antioxidants.
2. Major biochemical functions of sodium and Potassium? Mention their normal serum levels
3. Hemoglobin degradation (Bilirubin Formation) and explain its related disorders

SECTION – B

Q.3 Discuss on: (any three) **(15)**

1. Explain Regulation of gene expression with an example (Lac Operon).
2. Plasma Proteins.
3. Role of Buffers in maintaining acid base balance.
4. A school going boy was brought to hospital with puffy face & generalized edema. On examination- slight pallor present, pitting edema present, urine was frothy. Lab tests showed- Urine albumin: +++, S.Total Proteins: 4.5 gm/dl, S.Albumin: 1.5 gm/dl, S.cholesterol: 350 mg/dl. Physician provisionally diagnosed the patient suffering from nephritic syndrome.
   i. How much is the albumin: globulin ratio in this case? (1)
   ii. Why low serum albumin is associated with pitting edema?(1)
   iii. Enumerate various functions of albumin.(1)
   iv. Enumerate various causes of hypoalbuminemia.(1)
   v. Is serum cholesterol level normal in this case? If not, what is the cause of alteration in this case? (1)

SECTION – C

Q.4 Write briefly on: (any four) **(12)**

1. Tumor Markers.
2. Role of molecular techniques in diagnosis of disease.
3. Protein energy malnutrition.
4. Chromatography-types & Uses
5. Salvage pathway of Purine synthesis & Lysch Nyhan symdrome

Q.5 Answer the MCQ **(05)**

1. The ability of the cell membrane to act as a selective barrier depends upon
   (a) The lipid composition of the membrane (b) The pores which allows small molecules
   (c) The special mediated transport systems (d) All of these
2. Aromatic amino acids can be detected by
   (a) Sakaguchi reaction (b) Millon-Nasse reaction
   (c) Hopkins-Cole reaction (d) Xanthoproteic reaction
3. Which of the following contributes nitrogen atoms to both purine and pyrimidine rings?
   (a) Aspartate (b) Carbamoyl phosphate
   (c) CO_2 (d) Glutamine
4. The immunoglobulins are differentiated and also named on the basis of
   (a) Electrophoretic mobility (b) Heat stability
   (c) Molecular weight (d) Sedimentaiton coefficient like 7 S, 19 S etc.
5. Urine specific gravity of 1.054 indicates
   (a) Excellent renal function (b) Inappropriate secretion of ADH
   (c) Extreme dehydration (d) Presence of glucose or protein