

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Summer 2017-18 Examination**

**Semester: 4**  
**Subject Code: 11203252**  
**Subject Name: Physiology and Bioenergetics**

**Date: 10/05/2018**  
**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) Brief note (4x2) (Each of 04 marks)**

- (a) Write about Physiology of Kidney (04)  
(b) Explain in detail- Physiology of Vision (04)

**Q.1. B) Answer the following questions (Any two)**

- (a) Schematically label the figures (2x2)(Each of 02 marks) (04)  
1. Structure of Nephron  
2. Structure of Nerve Cell  
(b) Explain Erythropoiesis. (04)  
(c) Explain Digestion and absorption (04)

**Q.2. A) Answer the following questions.**

- (a) Short note (Each of 02 marks) (04)  
1. Composition of Blood  
2. Respiratory organs  
(b) Biochemical Changes associated with muscle contraction and relaxation (04)

**Q.2. B) Answer the following questions (Any two)**

- (a) Short note (Each of 01 mark) (03)  
1. Neurotransmitters  
2. Adrenergic Nerve Endings  
3. Hemoglobin  
(b) Write about Coagulation of Blood (03)  
(c) Mechanism of propagation of nerve impulse in myelinated nerve fibers (03)

**Q.3. A) Essay type (Each of 04 marks)**

- (a) Composition and structure of cell membranes (04)  
(b) Mitochondrial electron transport system- Organization of components and importance (04)

**Q.3. B) Answer the following questions (Any two)**

- (a) Short note (2x2) (Each of 02 marks) (04)  
1. Enthalpy  
2. Entropy  
(b) Different membrane models, explain any one model in detail (04)  
(c) Oxidative phosphorylation (04)

**Q.4. A) Answer the following questions.**

- (a) Short note (Each of 02 marks) (04)  
1. Cellular gap junctions  
2. Liposomes  
(b) Substrate level Phosphorylation (04)

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

- (a) Short note/ Multiple choice questions. (Each of 01 mark) (03)  
1. Membrane channels  
2. Ionophores  
3. Bioluminescence  
(b) Microsomal electron transport system (03)  
(c) Oxidation and reduction reactions (03)