

4/H-64 (iv) (Syllabus-2015)

2 0 1 8

(April)

BIOCHEMISTRY

(Honours)

(Cell Biology and Physiology)

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

Answer **four** questions, taking **two** from each Part

PART—A

(Cell Biology)

1. (a) Describe the structural differences between plant and animal cells with the help of suitable diagrams. 8
- (b) Discuss the salient features of TMV. 6

(2)

2. Write short notes on any *two* of the following : 7×2=14
- (a) Bacterial taxis
 - (b) Stem cells
 - (c) Density gradient centrifugation
3. (a) How do you differentiate between microtubules and microfilaments? Discuss the mechanism of ciliary movement. 4+5=9
- (b) Describe the extranuclear DNA found in eukaryotic cells. 5
4. (a) Describe the commonly utilized staining techniques in microscopy. 8
- (b) What are ribosomes? How is a prokaryotic ribosome different from an eukaryotic ribosome? 6

PART—B

(Physiology)

5. (a) What is homeostasis? Explain the mechanisms that help maintain homeostasis in animals. 1+4=5
- (b) Describe the role of calcium in blood coagulation. 4
- (c) Explain the absorption and transport of calcium in animals. 5

(3)

6. (a) Define respiration. What are the factors that affect the affinity of hemoglobin in binding oxygen? 1+4=5
- (b) Describe the role of myosin in muscle contraction. 4
- (c) Describe the functions of rod and cone cells in vision. 5
7. Write notes on any *two* of the following : 7×2=14
- (a) G-protein coupled receptor
 - (b) Protein kinases
 - (c) Second messengers
