2010

M.Sc.

4th Semester Examination

HUMAN PHYSIOLOGY

PAPER—XX

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Write the answers to the questions of each Unit in separate books.

UNIT—39

Answer any two questions.

1. (a) What do you mean by Lateral diffusion of proteins in cell membrane? Mention its significance.

(b) What is FRAP?

(c) What is Flip Flop Movement of membrane phospholipids? (3+3)+2+2

2. (a) What are Intermediate Filaments?

(b) Describe the different classes of Intermediate Filaments. 4+6

3. (a) Mention the significance of second messenger in Cell Signalling.

(b) Give an account of the different classes of G proteins mentioning their functions.

(c) Describe one metabolic pathway that is medicated through cAMP. 3+3+4

4. Write notes on the following : $2\frac{1}{2} \times 4$

(a) The site of oxydative energy production in a Living Cell.

(b) Membrane Domain

(c) RTK.

(d) Liposomes in Medical Therapy. 5+5

UNIT—40

Answer any *two* questions.

1. (a) What is the effect of methylation on DNA structure ?

(b) Write the mechanism of action of *E.Coli* DNA ligase and T_4 DNA ligase.

(c) What is cryptic plasmid ?

(d) Describe the structure of PBR^{322} showing the unique cleavage sites. 2+2+2+4

2. (a) What is meant by the term "primary cell line" ? Give an example of primary cell line.

(b) Discuss the importance of cell-line in biological research.

(c) What are the important outcomes of the human genome project (HGP) having biomedical importance ? 2+3+5

3. (a) Why "Dolly" the sheep became so famous ? Describe the special technique that was used to create "Dolly".

(b) Write the process and importance of western blotting technique 1+4+5

4. Write short notes on following : $2\frac{1}{2} \times 4$

(a) Chromosome walking ; (b) M–13 Phage ;

(c) Plasmid ; (d) Transgenic animal.