

2009**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) Give an experimental evidence in support of the presence of lipid bilayer in cell membrane.
(b) What is membrane fluidity?
(c) Mention the different factors on which the membrane fluidity is dependent. 5+2+3
2. (a) What do you understand by cytoskeleton?
(b) Give a brief account of the structural organization and function of Microtubules. 3+(4+3)
3. (a) Discuss the role of Inositol Phospholipids in signal transduction.
(b) What are SH2 domains? 8+2

(Turn Over)

4. Write notes on :

(a) Motor proteins ;

(b) Nitric Oxide as intercellular messenger.

5+5

UNIT—40

Answer any *two* questions.

1. (a) How will you choose the right type of vector for your experiment ?
- (b) Classify different restriction enzymes with respect to their mode of actions.
- (c) Write the importance of recombinant technology in modern biotechnology. 3+3+4
2. (i) What do you mean by therapeutic cloning ? Discuss your views on using genetically engineered stem cell as a therapeutic agent in a disease like diabetes. 2+4
- (ii) Differentiate between :
- (a) Transposons and retrospoons
- (b) Northern and western blot. 2+2
3. (a) What is Agarose gel electrophoresis ?
- (b) Write the process of Southern blotting.
- (c) Describe the importance of DNA finger printing. 3+4+3
4. Write short notes on : 4×2 $\frac{1}{2}$
- (a) Knock out animal ;
- (b) P. C. R. ;
- (c) Plasmids ;
- (d) DNA ligase.
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