

2016

M.Phil.

1st Semester Examination

LIFE SCIENCE

PAPER—LSC-113

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.

Group—A

1. Answer *any four* questions from the following : 4×2

(a) What is spectrin ?

(b) What is immunological synapse ?

(c) Name two microtubule destabilizing agent.

(Turn Over)

- (d) What is meant by immunological memory ?
- (e) What are apoptotic bodies ?
- (f) Name two calcium binding protein in cell.

Group—B

2. Answer *any four* question from the following : 4×4
- (a) Describe cell signalling mechanism by tyrosine kinase. 4
- (b) Write briefly on actin binding proteins involved in intracellular microfilament bundle formation. 4
- (c) Differentiate apoptosis from necrosis. 4
- (d) Write a brief note on proteoglycans. 4
- (e) Write briefly on two major classes on intermediate filaments. 2+2
- (f) Write down the major steps in phagocytosis. What is phagosome ? 3+1

Group—C

3. Define *any two* of the following terms : 2×8
- (a) (i) Discuss about the endogenous pathway for antigen presentation.
- (ii) What is vesicular trafficking? State its functional mode of action within the cell. 4+(2+2)
- (b) Mention the molecular compartments of extracellular matrix (ECM). State the mechanical properties of ECM. Discuss the molecular mechanism behind durotaxis. 2+4+2
- (c) Differentiate MHC Class I and Class II. Give a brief account of Antigen presentation mentioning the APCs. 2+(4+2)
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