**C/18/M Phil/1st Sem/LSC-113**

# 2018

## 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 : 4×2

(a) What are GAGs ?

(b) How you differentiate microtubules from microfilaments ?

(c) What is apoptosome ?

(d) State how a cell decide to commit suicide ?

(e) Give a brief description of Kinesin in relation to intracellular movements.

(f) Write a note on : AFM or Fluoresence microscopy.

## Group-B

2. Answer any *four* questions : 4×4

(a) Discuss the mechanisms of evasion of apoptosis in carcinogenesis.

(b) What is durotaxis ? State the molecular mechanisms behind it.

(c) Describe the structure of molecular motor protein Kinesin.

(d) What is phagolysosome ? Discuss the oxygen-dependent and oxygen-independent phagocytic degradation. 1+3

(e) How microtubules and microfilaments contribute to cellular structure and functional integrity ?

(f) State the principle and application of Live cell imaging. 2+2

## Group-C

**3.** Answer any *two* questions : 2×8

(a) (i) Discuss the morphological changes that occured in apoptotic cell.

(ii) State the molecular mechanism of extrinsic death receptor pathway of apoptosis. 4+4

(b) (i) Mention the primary components of all basement membranes.

(ii) Describe the structure and functions of proteoglycans *in ECM.* 2+(3+3)

(c) (i) What are the main adhesion molecule families ?

(ii) State the functions of cadherins.

(iii) Mention the types of cadherins expressed in different tissues. 1+5+2