NCD-003-1132001 Seat No. _____

M. Sc. (Biotechnology) (Sem. II) (CBCS) Examination

April / May - 2017

BT-206 : Molecular Cell Biology

Faculty Code : 003
Subject Code : 1132001

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instruction : All questions are compulsory. Support your answers with suitable illustrations where required.

1 Answer any seven out of the following 10 Questions : **14**
(2 Marks each)

(1) What is Mitosis?

(2) What is Meiosis?

(3) What is role of Kinase in cell cycling ?

(4) What is singnal transduction?

(5) What is the role of G-Protein?

(6) Define apoptosis.

(7) What is Necrosis?

(8) What are cytoskeletons?

(9) Define fertilization.

(10) What are Oncogenes ?

2 Answer any **two** of the following : (7 marks each) **14**

(a) What are different phases of mitotic cell division? Discuss in brief.

(b) Discuss meiosis describing the steps involved in meiosis.

(c) What is G-Protein? Discuss 'ON and OFF' mechanism involving G- Protein.

3 Answer the following : (7 marks each) 14

(a) What is the programmed cell death? How is it regulated?

(b) Describe Extrinsic Pathway of Apoptosis.

OR

3 Answer the following : (7 marks each) 14

(a) Discuss the Intrinsic Pathway of Apoptosis.

(b) Discuss the role of microtubules in cell division.

4 Answer the following : (7 marks each) 14

(a) What are different types of cytoskeletons? Discuss their significance.

(b) What are different events during fertilization? Provide an account of the Post-Fertilization events.

5 Write detailed comments on any **two** of the followings : (7 marks each) 14

(a) In-vitro fertilization

(b) Process of differentiation

(c) Oncogenes and Oncoproteins

(d) Microtubule nucleation.