



NCD-003-013201 Seat No. _____
M. Sc. (Biochemistry) (Sem. II) (CBCS)
Examination
April / May - 2017
BT-207 : Molecular Cell Biology
(Old Course)

Faculty Code : 003
Subject Code : 013201

Time : 2½ Hours]

[Total Marks : 70

Instructions : All questions are compulsory. Support your answer with suitable illustrations where required.

- 1 Answer any seven out of the following 10 Questions : 14
(2 Marks each)
- (1) Why DNA replication occurs only in S phase, not in other phases of cell cycle?
 - (2) If amount of DNA is 2X in G1 phase, what will be the amount of DNA in G2 phase?
 - (3) Write the name of any two secondary messengers which is activated by GPCR.
 - (4) Write the name of any two genes responsible for apoptosis induction in mammals.
 - (5) Which caspase is activated by TNF in extrinsic pathway?
 - (6) What two drugs will prevent polymerization of microtubules?
 - (7) Define spermiogenesis.
 - (8) Differentiate between holoblastic and meroblastic cleavage.
 - (9) Write the functions of check points in G1 and G2 phase.
 - (10) Explain angiogenesis process.

- 2** Answer any **two** out of the following : **7×2=14**
- (a) Write down the events of mitosis with special emphasis of MPF.
 - (b) Describe extrinsic pathway of apoptosis.
 - (c) Write down the molecular basis of signal transduction.
- 3** Answer the following : (7 Marks each) **14**
- (a) What is enzyme linked receptors? Explain MAP kinase pathway in details.
 - (b) What are Cytoskeleton proteins? Describe the function of actin filament and motor proteins.
- OR**
- 3** Answer the following : (7 Marks each) **14**
- (a) Write the molecular structure of arrangement of actin and myosin in muscle and in short describe the molecular mechanism of muscle contraction.
 - (b) Explain any 7 diagnosis process of cancerous cells.
- 4** Answer the following : (7 Marks each) **14**
- (a) How oncogenes are differs from tumor suppressor genes? What are myc genes? How myc genes are responsible for cancer?
 - (b) Briefly explain the post fertilization events of developmental stages in human.
- 5** Answer any **two** out of the following (7 Marks each) **14**
- (a) What are CDK inhibitors (CKI)? Write down the role of CKI in cell cycle.
 - (b) Differentiate between apoptosis and necrosis.
 - (c) Explain various cleavage processes during embryonic development.
 - (d) Write the short notes on viral oncogenes with special emphasis on src genes.