Enroll No. _____

Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous)
Affiliated to Saurashtra University, Rajkot

SEMESTER END EXAMINATION NOVEMBER – 2016

M.Sc. Biotechnology

16PBTCC01 - MOLECULAR CELL BIOLOGY

Duration of Exam – 3 hrs ***Semester – I*** ***Max. Marks – 70***

***Part A** (5x2= 10 marks)*

Answer **ALL** questions

1. Which pathway is associated with activation of mitosis in eukaryotes?
2. The regulatory protein must be degraded to cross through anaphase promoting complex is_____
3. Write the name of two drugs which inhibit actin polymerizations.
4. A person was surviving from colon cancer. Researchers observed that two types of gene has been mutated that leads to cancer. Which genes are mutated in cancer?
5. Which cell is responsible for production of testosterone?

***Part B** (5X5 = 25 marks)*

Answer **ALL** questions

6a. Describe transduction events in MAP kinase pathway.

OR

6b. What is GPCR? Describe secondary messengers and their role associated with GPCR.

7a. Why DNA replication occurs only in S phase, not in other phases of cell cycle?

OR

7b. Describe intrinsic pathway of apoptosis.

8a. Describe the Blobel Hypotheis.

OR

8b. Enlist the name of five chemical modifications with respective amino acid and function?

9a What are *myc* genes? How they are responsible for cancer?

OR

9b What are *ras* genes? How they are participating in oncogenesis process?

10a Differentiate between spermatogenesis and spermiogenesis.

OR

10b What is oogenesis? Write down the process of oogenesis.

Part C (5X7 = 35 marks)

Answer **ALL** questions

11a. Write down the molecular basis of signal transduction.

OR

11b. What is secondary messenger? Write down the role of formation and role of any two secondary messengers.

12a. What is protein kinase? What is the role of protein kinases in Cell Cycle?

OR

12b. Write down the mechanism of internal pathway of apoptosis.

13a. Write the molecular structure of arrangement of actin and myosin in muscle and in short describe the molecular mechanism of muscle contraction?

OR

13b. Write the five functions of Cytoskeleton? Describe the microtubule in detail?

14a Write down the mechanism of conversion of protooncogenes into oncogenes in brief.

OR

14b Write short notes on viral oncogenes.

15a Briefly explain the post fertilization events of developmental stages in human.

OR

15b What is IVF? Diagrammatically explain IVF. Briefly explain assisted techniques of IVF.