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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(BT) (2012 to 2017) (Sem.-4)

CELL & MOLECULAR BIOLOGY

Subject Code : BTBT-404

M.Code : 55087

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Q1. Answer briefly :**

- a) Explain the different functions performed by the smooth endoplasmic reticulum.
- b) How does CDKs and CDKIs play a role in cell cycle?
- c) What do you mean by 'Semi conservative mode of replication'?
- d) Describe the structure of an Eukaryotic chromosome?
- e) What are the differences between RNA polymerases in prokaryotes and eukaryotes?
- f) Name any Inhibitor of translation and its mode of action.
- g) What is the function of a tumor suppressor gen?
- h) Write down the process of RNA capping.
- i) Explain the role of cis-regulatory sequences.
- j) What are the different types of components of the cytoskeleton?

SECTION-B

- Q2. Explain the structural organization of the mitochondria and also describe the process of oxidative phosphorylation.
- Q3. Explain and list the different various steps taking place during mitosis of a cell. Also describe the significance of mitosis.
- Q4. Explain the mechanism of Base Excision repair (BER) pathway taking place during DNA repair.
- Q5. Elucidate and explain the different Post transcriptional modifications.
- Q6. Write about the epigenetic modifications taking place during regulation of gene.

SECTION-C

- Q7. Briefly describe the process of DNA Replication in *E.coli* Also explain the different enzymes that are involved in the above process.
- Q8. Write explanatory notes on :
- a) Function of signal peptide and transport
 - b) The components found in the extracellular matrix (ECM)
- Q9. Briefly describe the process of regulation of gene expression in Lac Operon.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.