D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1.

CELL AND MOLECULAR BIOLOGY (16CPZO1C)

UNIT-I SECTION-A 6 Marks

1. Write about the fluid mosaic model of plasma membrane.
2. Enlist the role of membrane receptors.
3. Explain about the active transport of plasma membrane.
4. Explain about the passive transport of plasma membrane.
5. Write a short note on cell adhesion.
6. Describe the intercellular recognition.
7. Write about the gap junction.
8. Describe about the tight junction.
9. Explain the structure of endoplasmic reticulum.
10. Give a short note on an intracellular transport of endoplasmic reticulum.
11. Describe the structure of mitochondria.
12. Write about the mitochondrial replication.
13. Describe briefly the structure and function of ribosome.

SECTION-B 15 Marks

1. Explain in detail about the structure of plasma membrane.
2. Write a detailed account on membrane potentials.
3. Write about the mitochondrial energetic and cellular respiration.

UNIT-II SECTION-A 6 Marks

1. Enlist the role of nuclear receptors.
2. Explain –cell fusion.
3. Discuss about the homokaryons and heterokaryons.
4. Write about the structure and function of chromatin.
5. Differentiate between the euchromatin and heterochromatin.

SECTION-B 15 Marks

1. Give a detailed account on the nucleocytoplasmic interactions.
2. Write about the polytene and lampbrush chromosomes.

UNIT-III SECTION-A 6 Marks

1. Explain – Mitosis cell division.
2. Give a brief account on the meiosis cell division.
3. Discuss about the spindle organization during cell division.
4. Write about the chromosome movements during cell division.
5. Differentiate between normal and cancer cell.
6. Structural and functional characteristics of any two tumour virus.
7. Explain – Oncogenes.
8. Enlist the environmental factors inducing cancer.
9. Write about the hormones in relation to cancer.

SECTION-B 15 Marks

1. What is cell cycle? Explain in details about the G_0-G_1 transition.
2. Write a detailed account on regulation and synchronization of cell division.
3. Explain about the theories of carcinogenesis.

UNIT-IV SECTION-A 6 Marks

1. Write about the chemistry of DNA.
2. Explain about the types of DNA.
3. Write about the mechanism of DNA replication in prokaryotes.

SECTION-B 15 Marks

1. Explain in detail about the enzymes involved in DNA replication.
2. Discuss about the DNA repair and its various types.

UNIT-V SECTION-A 6 Marks

1. State the role of RNA polymerase.
2. Explain Promoters.
3. Write about the transcription in prokaryotes.
4. Describe about the transcription in eukaryotes.
5. Give a brief account on the genetic code.
6. Explain –Wobble hypothesis.
7. Discuss about the post translational modifications.

8. Write about the antibiotic inhibitors of protein synthesis.

SECTION-B 15 Marks

1. Explain in detail about the various types of RNA.
2. Write a short note on
    a) Splicing
    b) Capping
    c) Polyadenylation
3. Discuss about the mechanism and regulation of translation in prokaryotes.
4. Write about the mechanism and regulation of translation in eukaryotes.