

D.K.M.COLLEGE FOR WOMEN (AUTONOMOUS),VELLORE-1.
BIOPHYSICS AND BIOCHEMISTRY (16CPZO3D)

UNIT-I

SECTION-A

6 Marks

1. Give a brief account on electron configuration of an atom.
2. Explain covalent bonds.
3. Explain about the sulphide and hydrogen bonds
4. Describe the forces between the bonds
5. Explain about the electrostatic forces.
6. Explain the hydrophobic and hydrophilic interactions

SECTION-B

15Marks

1. Write about the Vanderwal's force interaction

UNIT-II

SECTION-A

6 Marks

1. Discuss about the first law of Thermodynamics.
2. Explain – entropy.
3. Explain – enthalpy.
4. Write about the effect of sunlight and temperature on reactions.
5. Describe about the Arrhenius expression.
6. Explain about the Fick's laws in diffusion.
7. Explain about the Gibbs Donnan equilibrium.
8. Write about the oxidation and reduction reactions.
9. Discuss about the high energy phosphate group.

SECTION-B

15 Marks

1. Discuss in detail about the free energy change in biological systems.
2. Give an account on "Redox potentials" in biological system.

UNIT-III

1. Give a brief account on electromagnetic radiation.
2. Write a short note on visible and invisible region.

3. Explain the principle and applications of photoelectric colorimetry.
4. Discuss about the principles of UV and IR spectroscopy and its role in biological investigation.
5. Write a note on the effect of UV on biological systems.
6. Explain about radioactive isotopes.
7. Describe the GM tubes and Scintillation counter.
8. Write short notes on autoradiography.

UNIT-IV

SECTION-A

6 Marks

1. Explain the structure of carbohydrates.
2. Write about the classification of carbohydrates.
3. List out the biological significance of carbohydrate.
4. Explain – Embden mayer off pathway.
5. Explain – Citric acid cycle.
6. Explain – Electron transport chain.
7. Write about the classification of protein.
8. Discuss about the inborn errors of protein metabolic disorders.
9. Give a brief account on the haemoglobin and myoglobin proteins.
10. List out the biological significance of protein.
11. Describe the structure of lipids.
12. Write about the classification of lipids.
13. List out the biological significance of lipids.

SECTION-B

15 Marks

1. Explain in detail about the energy budget of carbohydrates.
2. Describe in detail about the structure of proteins.
3. Give a detailed account on the metabolism of lipids.

UNIT-V

SECTION-A

6 Marks

1. Write about the classification of vitamins.
2. Describe about the structure, sources and deficiencies of fat soluble vitamins.
3. Write about the classification of minerals.
4. Discuss about the daily requirements and deficiencies of microminerals.
5. Explain the daily requirements and deficiencies of macrominerals.

SECTION-B**15 Marks**

1. Describe in detail about the structure, sources and deficiencies of water soluble vitamins.