

St. Joseph's College of Arts & Science (Autonomous)
Cuddalore – 607 001
PG & Research Department of Biochemistry

Subject: BIOPHYSICS

Subject code: ABC401

Class: II B.Sc Physics (Shift I & Shift II)

Staff incharge: Dr.N.Priya, Dr. S. Silvan, Ms. R. Anitha &
Mrs. Seethalakshmi

I. Answer in one or two sentences

1. Define nucleotide.
2. What is Denaturation?
3. What is Haemoglobin?
4. What is radioactive decay?
5. Define Radio Active with example.
6. Define melting temperature (T_m) of DNA
7. What is radio dating?
8. Define Curie
9. Write down the principle of spectrofluorimetry
10. Mention any two applications of flame photometry.
11. Define renaturation
12. Define gene.
13. Define Zwitter ion
14. What are isotopes?
15. Define Quenching.
16. Define Beer – Lamberts law.
17. Structure of Hemoglobin.
18. Define annealing.
19. Define ECG.
20. What is Chargaff's rule?
21. Why T_m (melting temperature) is greater for DNA with higher GC content?
22. What are metallo proteins? Give an example

23. What is meant by complete protein?
24. Define action potential
25. What is axon hillock?
26. What is meant by scintillation?
27. Define Becquerel
28. Define Beer – Lambert's law
29. What is generally used as radiation source in spectrofluorimetry?
30. What are histones?
31. Define membrane potential.
32. What is radioactive decay?
33. What are chromophores?
34. What is gradient?
35. Define radio active with example.
36. What is the length of each coil in DNA strand?
37. What are building blocks of Nucleic acids?
38. What are the repeating units in protein?
39. Which type of bond present in protein?
40. What are the techniques used in analysis of 3-D structure of protein?
41. A high-speed electron ejected from a nucleus during radioactive decay is called a (an)
42. The muscles that are found in heart to circulate the blood are known as
43. The action potential relies upon the movement of which of these ions into and out of the cell?
44. What is a lipoprotein
45. What is a neuron
46. Give an example of globular proteins
47. What is a protein?
48. Expand EEG
49. Draw the structure of adenine
50. Give one use of flame photometer
51. Give the unit for radioactivity
52. What is resting potential?
53. Give the unit for radioactivity
54. Give derived proteins
55. Draw the structure of adenine

Section –B

1. Define briefly Griffith's experimental group of DNA as genetic material
2. Elaborate the structure of a neuron
3. Give an account on the various applications of spectrofluorimetry
4. Explain central dogma of molecular biology
5. What is nerve impulse? Explain.
6. Give a brief note on applications of radioisotopes.
7. Write short notes on central dogma.
8. Write short notes on biological functions of fibrous proteins.
9. Explain briefly the biochemical conduction of nerve impulses.
10. Explain briefly the principle and applications of autoradiography.
11. Write short notes on GM counter.
12. Describe briefly the biological applications of UV-VIS spectrophotometry.
13. Write a short note on the structure of nucleotide and polynucleotide
14. Describe the different types of bonds that stabilize the structure of proteins
15. What are lipoproteins? Explain their biological functions
16. Elaborate the bioelectrical phenomenon of ECG
17. Write short notes on units of radioactivity
18. Write a note on zwitter ion.
19. What is nerve impulse? Explain.
20. Explain isotope dilution analysis.
21. Give a brief note on Autoradiography.
22. Write a note on applications of radioisotopes.
23. Discuss briefly how DNA act as a genetic code with an experiment
24. Explain the functions of globular proteins in human?
25. Short notes on structure of neuron.
26. Explain the applications of radioisotopes in biology briefly?

27. Write a note on principle ,instrumentation and application of flame photometer
28. Explain denaturation and renaturation of proteins
29. Explain the structure of nerve cell with neat diagram
30. How proteins are classified? Explain

Section- C

1. Describe Watson crick model & base pairing.
2. Explain the a note on conduction of nerve impulse.
3. Explain the principle and application of UV-visible spectrophotometry.
4. Explain the structure and functions of different types of RNA.
5. Give a detailed account on the structural organizations of proteins.6.Describe the Watson crick model of nucleic acids.7.Describe the Primary and secondary structure of proteins.
- 8.Explain briefly the bioelectrical phenomenon of ECG.
- 9.Write short notes on applications of radioisotopes in biology.
- 10.Explain briefly the principle and biological applications of flame photometer.
11. Give a detailed account on classification of amino acids based on structure
12. Elaborate the molecular basis of muscle contraction
13. Describe the various applications of radio-isotopes in the field of biology
14. Explain the principle and biological applications of flame photometer
15. Explain primary structure of protein.
16. Discuss the scintillation counter in detail.
17. Explain the conduction of nerve impulse.
18. Explain the principle and application of UV-visible spectrophotometry.
- 19.Explain DNA-double helical structure of Watson Crick model
20. Explain the structure of proteins?
21. Describe about bioelectrical and biochemical conduction of nerve impulses.

22. Explain the techniques of GM counter
23. Explain Watson Crick model of DNA structure
24. Explain the applications of radioisotopes in biology
25. Explain the principle and applications of spectrofluorimetry