**22BCP102/18BCP02**

**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)

**MSc DEGREE EXAMINATION DECEMBER 2022**
(First Semester)

Branch – **BIOCHEMISTRY**

**ANALYTICAL BIOCHEMISTRY**

Time: Three Hours Maximum: 50 Marks

**SECTION-A (5 Marks)**
Answer **ALL** questions
**ALL** questions carry **EQUAL** marks (5 x 1 = 5)

1. The speed of migration of ions in electric field depends upon:
   (i) Shape and size of molecule
   (ii) Magnitude of charge and shape of molecule
   (iii) Magnitude of charge shape and mass of molecule
   (iv) Magnitude of charge and mass of molecule

2. Indicate the wavelength range for UV spectrum of light.
   (i) 400 nm – 700 nm (ii) 700 nm to 1 mm
   (iii) 0.01 nm to 10 nm (iv) 10 nm to 400 nm

3. Name the type of chromatography involves in the separation of substances in a mixture over a 0.2mm thick layer of an adsorbent.
   (i) Gas liquid (ii) Column
   (iii) Thin layer (iv) Paper

4. _____ endonuclease cleaves both single and double stranded DNA molecules, in a non-specific manner.
   (i) S1 (ii) Bal31
   (iii) DNase I (iv) BamHI

5. Identify which of the following disorder is an example of point mutation?
   (i) Sickle cell anaemia (ii) Down's syndrome
   (iii) Night blindness (iv) Thalassemia

**SECTION - B (15 Marks)**
Answer **ALL** Questions
**ALL** Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a. Recommend the general methods for extraction of lipids.
   OR
   b. What are alkaloids? Explain with its importance and examples.

7. a. How do you assay enzymes by spectrofluorimetric method? Justify.
   OR
   b. State the counting method for radioisotopes.

8. a. Explain the principle and method of affinity chromatography.
   OR
   b. Prepare a note on MOLDI-TOF.

9. a. Organize the different types of probes.
   OR
   b. Produce a note on RFLP with its applications.

10. a. Discuss in detail sickle cell anemia.
   OR
   b. Analyze the method of DNA foot printing.

**Cont...**

## SECTION -C (30 Marks)

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks (5 x 6 = 30)

11. a. Plan the extraction and purification of alkaloids.

OR

b. Illustrate the principle, instrumentation and applications of autoanalyzer.

12. a. Construct a note on density gradient centrifugation with its applications.

OR

b. Assess the enzyme activity by colorimetric and radiometric methods.

13. a. Analyze the principle, components and applications of HPLC.

OR

b. Develop a note on NMR with its applications.

14. a. Evaluate southern blotting technique with its applications.

OR

b. Determine the principle, types and applications of PCR.

15. a. Create a note on thalassemia as a probe.

OR

b. Interpret the method and applications of comet assay.

Z-Z-Z END