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AR-19

M.SC

M.Sc 1ST SEMESTER REGULAR EXAMINATIONS, NOV/DEC 2019-20

BTPC103-BIOPHYSICAL TECHNIQUES

Time: 3 Hours

Max Marks: 80

The figures in the right hand margin indicate marks.

SECTION A

Q.1 Answer any four of the following: **[4 X4 =16]**

- a Discuss the principles of Light Microscopy
- b Geiger-Muller Counter
- c Beers-Lamberts Law
- d PCR cycles
- e Western Blot
- f Applications of Analytical Centrifuge

OR

2. Answer all questions from the following

[2 x 8 =16]

- a How magnification affects resolutions in Microscopy?
- b What is Sedimentation Coefficient?
- c Applications of X-ray Crystallography
- d Half life period in Radioactive decay
- e Applications of PCR in Crime detection
- f Techniques of Gel-permeation chromatography
- g What is advantage of Reverse Phase Chromatography?
- h Principles of Density Gradient Centrifugation

SECTION-B

3. Answer all Questions:

[16 x4 =64]

- a Discuss the principles, instrumentation and application of Scanning Electron Microscope?

OR

- b What are different types of Centrifuge? Discuss general principles and applications

4.

- a What are the Laws associated with Spectrophotometry? Discuss the instrumentation and advantage of Spectrophotometer over colorimeter

OR

- b How the Radioactivity is measured? Discuss with suitable diagram and examples

5.

- a Discuss the principles, types and application of Paper Chromatography.

OR

- b Discuss the principles, instrumentation and applications of HPLC

6.

- a What is Electrophoresis? Give detailed illustration of PAGE

OR

- b What are different types of Nucleic Acid Hybridization techniques, Give its applications with suitable diagrams