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M.Sc.(BT) (2011 & Onwards) (Sem.-2)
BIOCHEMICAL AND BIOPHYSICAL TECHNIQUES
Subject Code : MSBT-102
Paper ID : [F0256]

Max. Marks : 60

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

Q1. Answer briefly :

- a) Distinguish between strong and weak ion exchangers.
- b) Write down the principle of NMR.
- c) Define half life of a radioisotope. What is the half life of C14?
- d) What is the advantage of phase contrast microscopy?
- e) Define magnification power and resolving power of a microscope.
- f) Write down the principle of electrophoresis.
- g) What is the relationship between *rpm* and *g* of a centrifuge?
- h) What are the applications of Northern blotting?
- i) Define microarray.
- j) Define autoradiography.

SECTION-B

- Q2. Write down the main components of HPLC machine and their functions.
- Q3. Describe the methods of measurement of radioactivity.
- Q4. Write a brief note on CT scan.
- Q5. Describe electrochemical properties of biopolymers.
- Q6. Write a brief note on Southern blotting.

SECTION-C

- Q7. Describe principle, working and applications of UV-visible spectrophotometer.
- Q8. Describe principle, working and applications of transmission electron microscope.
- Q9. Discuss in detail working and applications of PCR.