



**MAY-003-001326**

Seat No. \_\_\_\_\_

**B. Sc. (Sem. III) (CBCS) Examination**

**November/December – 2016**

**BC-301 : Biophysical & Biochemical Techniques**

**Faculty Code : 003**

**Subject Code : 001326**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :
- (1) Question 1 covers objective type questions of 20 marks.
  - (2) Write answer of all section in main answer sheet.

#### SECTION-I

1 Objective type one mark questions : 20

- (1) In the given equation  $A = \epsilon cl$  What is the indication of " $\epsilon$ " ?
- (2) Why the voltage supplied to a tungsten lamp must be very stable ?
- (3) Beer's Law state that \_\_\_\_\_.
- (4) Identify the Wavelength region 700 nm-200  $\mu m$ .
- (5) List out the rate of sedimentation factors depending on RCF.
- (6) Which type of mixture separated by Centrifuge ?
- (7) After centrifugation sublimate observed at \_\_\_\_\_.
- (8) List out the various types of centrifuge.
- (9) Fine insoluble solid particle can be removed by \_\_\_\_\_ techniques.
- (10) Thin layer chromatography is known as \_\_\_\_\_.
- (11) In case of reverse phase chromatography, the stationary phase is made by Non Polar compound. True or False.
- (12) Ion exchange chromatography is based on the \_\_\_\_\_
- (13) In a native PAGE, protein are separated on the basis of \_\_\_\_\_.

- (14) Give full form of RFLP.
- (15) What is ethidium bromide ?
- (16) Electrophoresis is not used for separation of \_\_\_\_\_.
- (17) Compound containing some amount of radioisotopes called \_\_\_\_\_.
- (18) Give a contribution of Rutherford and Soddy.
- (19) If the radioactive particles give rays. True or False.
- (20) Write a unit of radioactivity.

## SECTION-II

- 2 (a) Answer in brief : (any three out of six) **3×2=6**
- (1) Explain general principle of colorimeter.
  - (2) What is the role of monochromators in Spectrophotometer ?
  - (3) Define – RCF write about its importance.
  - (4) What is isoelectric focusing give its suitable examples ?
  - (5) Explain about radioisotopes with examples.
  - (6) List out types of electrophoresis with examples.
- (b) Answer in detail : (any three out of six) **3×3=9**
- (1) Discuss the general principle and application of
    - (a) Thin layer chromatography
    - (b) Molecular sieve chromatography
    - (c) Gas liquid chromatography
- OR**
- (d) Immunoelectrophoresis
  - (e) Electrophoresis
  - (f) Scintillation counting.
- (c) Write notes on : (any two out of five) **5×2=10**
- (1) Explain in detail instrumentation of spectrophotometer.
  - (2) Write a note on ultracentrifuge and its application.
  - (3) Explain clinical application of radioisotopes.
  - (4) Write the principle, procedure and application of paper chromatography.
  - (5) Describe the principle and application of Gel electrophoresis.

### SECTION-III

- 3** (a) Answer in brief : (any three out of six) **3×2=6**
- (1) Draw a well labelled diagram of photo emissive tube.
  - (2) What is Angular velocity ?
  - (3) What is the Alpha particles emission ?
  - (4) Importance of agarose gel.
  - (5) Give significance of cationic and anionic exchanger.
- (b) Answer in detail : (any three out of six) **3×3=9**
- (1) Draw a net diagram of double beam spectrophotometer and explain in detail.
  - (2) Explain various types of rotors used in centrifugation.
  - (3) Write a note on different units of radioactivity.
  - (4) Explain in detail ion exchange chromatography.
  - (5) Discuss on SDS-PAGE electrophoresis.
  - (6) Explain homogenizer.
- (c) Write notes on : (any two out of five) **5×2=10**
- (1) Enlist various types factors affecting on electrophoretic mobility.
  - (2) What is spectroscopy ? Describe in detail application of spectroscopy.
  - (3) Write a note on density gradient centrifuge.
  - (4) Write about Geiger Muller counter.
  - (5) Short note on affinity chromatography.
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