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B.Sc. RNLKWC-/DSE-3T/22

2022

**MICROBIOLOGY**

[Honours]

**B.Sc. Sixth Semester End Examination - 2022**

**PAPER - DSE-3T**

**Instrumentation and biotechniques**

**Full Marks : 40**

**Time : 2 hours**

*The figures in the right-hand margin indicate marks.  
Candidates are required to give their answers in their own  
words as far as practicable.  
Illustrate the answers wherever necessary.*

**Group - A**

**Answer any five questions from the following : 5×2=10**

1. Write down the functions of running gel and stacking gel.  
1+1
2. Write down the significance of  $R_f$  value and  $R_m$  value. 1+1
3. Distinguish between colorimeter and UV-Spectrophotometer.  
1+1

*(Turn Over)*

( 2 )

4. Write down the free radical mechanism to form the polyacrylamide gel. 2
5. Differentiate between colorimetry and turbidometry. 2
6. What is size-exclusion chromatography? 2
7. Define isoelectric point. 2
8. Define sedimentation co-efficient. 2

**Group - B**

**Answer any four from the following :** 4×5=20

1. State the difference between HPLC and GC? Write the application of Gel-filtration Chromatography? (2+3)=5
2. State the principle and application of column chromatography. (3+2)=5
3. What are RPM and RCF? Write down the relation between them. (2+3)=5
4. Write the basic principles of PAGE and agarose gel electrophoresis. (3+2)=5
5. Describe the derivation of Lambert-Beer's law. Write down its limitation. (3+2)=5

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( 3 )

6. What is micrometry? Mention the two common types of micrometers. 3+2

**Group - C**

**Give answer any one from the following :** 10×1

1. What is Zynogram? Chassify centrifugation and briefly describe each type of centrifugation. (2+8)
2. What are the differences between anion exchange and cation exchange chromatography? State the function of resein used. State the procedure of ion-exchange chromatography with flow-chart. 4+2+4

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