

Total Pages – 3

B.Sc. RNLKWC-/C14T/22

2022

MICROBIOLOGY

[Honours]

B.Sc. Sixth Semester End Examination - 2022

PAPER - C14T

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. What is chromosome walking and chromosome jumping?
1+1
2. What is the application of colony PCR?
3. What is site-directed mutagenesis?
4. Name the Octacuttar restriction enzyme mentioning the
source. 1+1

(Turn Over)

(2)

5. Write the differences between T4DNA ligase and E-coli DNA ligase. 2
6. What is microinjection? 2
7. What kind of dye used in real time PCR. Give example. 1+1
8. What is genomic library? 2

Group -B

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

1. Write in brief about DNA microarray and its applications. 4+1
2. State the blue-white selection strategy of remombinant screening. 2+3
3. Differentiate between Southern blotting, Northern blotting and Western blotting. 5
4. What is meant by gene delivery? Explain any one process. 5
5. (i) Write the salient factures of the plasmid pBR³²².

(3)

- (ii) Write the differences between BACs and YACs. 3+2
6. a) How do Restriction enzymes protect their own DNA from restriction digestion?
- b) Write down the role of terminal transferase in genetic engineering. 3+2

Group - C

Answer any one question from this following : 1×10

1. a) Mention the steps of PCR. How does Taq DNA Polymerase differ from DNA Polymerase?
- b) Schematically represent the RT PCR technique.
- c) Write down the principle of Sangar's method DNA sequencing? (3+2)+3+2
2. a) What is full form of SDS-PAGE? Briefly describe the role of SDS in SDS-PAGE. How would you determine the molecular weight of protein using SDS-PAGE?
- b) Write down the role of Ti Plasmid of gene transfer. Write briefly on application of Southern blotting. (1+2+2)+3+2