REV-01
MMB/01/05

2025/06

SET A

M.Sc. MICROBIOLOGY
SECOND SEMESTER (REPEAT)
MICROBIAL GENOMICS
MMB-203

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins. **Full Marks: 35**

(Objective)

Time: 15 mins. **Marks: 10**

Choose the correct answer from the following: ***1×10=10***

1. Which of the following is correct for vectors?
   a. Are DNA molecules
   b. Carry foreign DNA fragment
   c. Self-replicating
   d. All of the above

2. Examples of common vectors are:
   a. Plasmids
   b. Phasmids
   c. Both a and b
   d. Only a

3. Denaturing agent used in DGGE technique is:
   a. Urea
   b. Formamide
   c. Both a and b
   d. Neither a nor b

4. FISH is not used for:
   a. Karyotyping
   b. DNA sequencing
   c. Disease identification
   d. Both a and c

5. The idea behind shotgun sequencing includes:
   a. Breaking down the genome into smaller fragments
   b. Assembling the sequences after sequencing
   c. Both a and b
   d. Only a

6. In PFGE DNA can be separated by:
   a. Altering the direction of DNA migration
   b. By altering the electric field
   c. Neither a nor b
   d. Both a and b

7. RAPD is a:
   a. Dominant marker
   b. Codominant marker
   c. Heterozygous marker
   d. Homozygous marker

8. Identify the correct one for RFLP.
   a. PCR is not involved
   b. Co-dominant marker
   c. Both a and b
   d. Neither a nor b

9. A concatemer is a:
   a. Long continuous DNA molecule
   b. Contain multiple copies of same DNA
   c. Linked chain
   d. All of the above

10. Functional genomics includes:
    a. Gene expression
    b. Forward genetics
    c. Reverse genetics
    d. All of the above

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Descriptive

Time : 1 hr. 15 mins. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. What is whole genome shotgun sequencing? Explain. 5

2. Write down the differences between RFLP and RAPD. What is simple sequence length polymorphism? Explain in detail. 5+5=10

3. Write short notes on: 5×2=10
   a) FISH
   b) DGGE

4. Write brief note on the following: 5×2=10
   a) PFGE method
   b) Physical mapping by DNA hybridization

5. What is SAGE? Explain in detail with proper diagram of each step. 10

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