RAN - 2103000205021052

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## T.Y.B.Sc. (Sem. V) Examination October - 2023

## Bioscience (Microbiology)(Paper : BS-502)

## Bacterial Genetics & Biotechnology

**Time: 2 Hours ]** **[ Total Marks: 50**

**સૂચના : / Instructions**

(૧) **નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.**
**Fill up strictly the details of ☛ signs on your answer book**

Name of the Examination:

☛ **T.Y.B.Sc. (Sem. V)**

Name of the Subject :

☛ **Bioscience (Microbiology)(Paper : BS-502) Bacterial Genetics & Biotechnology**

Subject Code No.: **2103000205021052**

Seat No.:

Student's Signature

(2) Figures to the right indicate full marks.
(3) Draw neat & clean diagram wherever necessary.

**Q. 1 Multiple choices Questions. (MCQ)** **08**

1. In biosynthesis of proteins the chain terminating codon are
   a. UAA, UAG and UGA b. UGG, UGU and AGU
   c. AAU, AAG and GAU d. GCG, GCA and GCU

2. The formation of initiation complex during protein synthesis requires a factor:
   a. IF-III b. EF-I
   c. EF-II d. RF-I

3. The mechanism of gene transfer in prokaryote is called _____
   a. Vertical gene transfer b. Horizontal gene transfer
   c. Parallel gene transfer d. All

4. U - tube experiment are used to demonstrate _____.
   a. Transformation b. Transduction
   c. Conjugation d. All

5. Which of the following is an example of cloning vector?
   a. pBR322 b. pJC720
   c. pYAC d. All

6. Restriction endonucleases recognize and cut a certain sequence of
   a. Single stranded DNA b. Double stranded DNA
   c. RNA d. Protein

7. PCR is also known as _____
   a. rDNA technology b. DNA annealing
   c. DNA amplification d. DNA repair

8. Southern blotting is useful to identify _____
   a. RNA sequence b. DNA sequence
   c. Protein sequence d. All

**Q. 2 (A) Give Specific answers.** **04**

1. Define : Apurinic sites.
2. What is transgenic organism?
3. What is recombination?
4. What is nucleic acid hybridization?

**(B) Write short notes on (any two)** **10**

1. BAC & YAC vectors
2. F′ Conjugation
3. Gel electrophoresis

**Q. 3 Answer the following question.** **14**

1. Explain the specialized transduction process.
2. Write in detail about Transposable genetic elements.

**OR**

**Q. 3** Describe the process of translation in bacteria. **14**

**Q. 4 Explain any two of the followings.** **14**

1. Application of rDNA technology.
2. Describe plasmids as a cloning vector.
3. Polymerase chain reaction.

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