

RAN-2103000205021052
T.Y.B.Sc. (Sem. -V) Examination October - 2025
Bioscience (Microbiology - Old)
BS - 502: Bacterial Genetics&Biotechnology
Time: 2 Hours]
[Total Marks: 50
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right indicate full marks
- (3) Draw neat & clean diagram wherever necessary

Seat No.:

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Student's Signature

Q. 1 Multiple choices Questions. (MCQ)
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1. Initiation of protein synthesis begins with binding of _____
 (A) 40S ribosomal unit on mRNA
 (B) 60S ribosomal unit
 (C) Charging of tRNA with specific amino acid
 (D) Attachment of aminoacyl tRNA on mRNA
2. RF I, RF II and RF III are required for _____
 (A) Elongation (B) Termination
 (C) Initiation (D) Activation
3. Which of the following is a type of bacterial conjugation?
 (A) F × F Conjugation (B) H Conjugation
 (C) F' Conjugation (D) All
4. A pieces of bacterial DNA that can be transfer to another bacterium by virus is called _____
 (A) Transformation (B) Transduction
 (C) Transposition (D) All
5. YAC can be used to insert the DNA sequences of the size _____
 (A) Upto 10kb (B) Upto 45 kb
 (C) Upto 100kb (D) Upto 1,000 kb
6. A hybrid of plasmid and phage is called _____
 (A) Plasmid (B) BAC
 (C) Cosmid (D) YAC
7. The DNA polymerase commonly used in polymerase chain reaction is obtained from _____
 (A) *E. coli* (B) Yeast
 (C) *T. aquaticus* (D) Eukaryotes
8. What is required to perform Gel electrophoresis?
 (A) An electrophoresis unit (B) Loading dye
 (C) Gel (D) All

- Q. 2 (A) Give Specific answers** **04**
1. State the enzymes involved in translation.
 2. Define: Genetic engineering.
 3. Give any two examples of types of recombination.
 4. Write the full form of PCR and dNTPs.
- (B) Write short notes on any two of the following** **10**
1. Molecular scissor
 2. Abortive transduction
 3. DNA finger printing
- Q. 3 (a)** Write on the initiation process of protein synthesis in *E. coli* **14**
- (b)** Describe the elongation process of polypeptide chain in bacteria.
- OR**
- Q. 3** Write an essay on – How protein is synthesis in prokaryotes? **14**
- Q. 4 Explain any two of the followings.** **14**
1. Agricultural & Medical application of rDNA technology.
 2. DNA amplification
 3. General methods & Screening for chimeric molecule.
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