

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018

Subject Code:2150401

Date:27/11/2018

Subject Name:Advanced Molecular Biology - I

Time: 10:30 AM TO 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	MARKS
Q.1 (a) Draw and annotate the map of F factor.	03
(b) What are F prime cells? How are they generated?	04
(c) Explain the process of DNA mobilisation from donor to recipient during conjugation.	07
Q.2 (a) Explain three different mechanism by which conjugation takes place.	03
(b) What are prerequisites for conjugation to occur?	04
(c) Compare generalised and specialised transduction.	07
OR	
(c) Explain abortive transduction with a neat diagram.	07
Q.3 (a) what is gene cloning ?	03
(b) Explain U tube experiment used in discovery of transduction.	04
(c) Explain mechanism of natural competence in <i>Haemophilus influenzae</i> with suitable diagram.	07
OR	
Q.3 (a) What is competence?	03
(b) What are the factors that affect mechanism of transformation.	04
(c) Explain mechanism of natural competence in <i>Streptococcus pneumoniae</i> with suitable diagram.	07
Q.4 (a) What is biological role of Homologous Recombination?	03
(b) Explain two possible resolution fates of DSB repair pathway.	04

OR

- Q.4** (a) What is significance of melting point T_m in PCR? 03
- (b) How the restriction enzymes are named? Give an example 04
- (c) Explain the RecBCD pathway system of *E.coli*. 07
- Q.5** (a) What are linkers and adapters? 03
- (b) Explain principle working of northern hybridisation. 04
- (c) Differentiate in detail between PBR322 and PUC8 with suitable diagram 07

OR

- Q.5** (a) What are palindromic sequences? 03
- (b) Explain principle and working of western hybridisation. 04
- (c) Define the term PCR. Explain the principle and application of PCR. 07
