

**BSc DEGREE EXAMINATION MAY 2017**  
(Fifth Semester)

Branch - **MICROBIOLOGY**

**PRINCIPLES OF GENETIC ENGINEERING**

Time : Three Hours \*

Maximum : 75 Marks

**SECTION-A (20 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (10x2 = 20)

- 1 DNA ligase.
- 2 *Pst*l.
- 3 Ti plasmid.
4. Replacement vector.
- 5 Phasmids.
- 6 Cohesive ends.
- 7 cDNA.
- 8 DNA hybridisation.
- 9 Applications of PCR.
- 10 Nitrocellulose membrane.

**SECTION - B (25 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5 x 5 = 25)

- 11 a Give brief note on mechanism of DNA ligase.  
OR  
b Write details about the types of restriction endonuclease.
- 12 a What is expression vector? Comment on it.  
OR  
b Write about cosmids.
- 13 a Write about shuttle vectors.  
OR  
b Describe about the structure of the plasmid cloning vector pUC 18.
- 14 a Explain DNA hybridization in screening of recombinants.  
OR  
b Describe about cDNA synthesis from homopolymer tailing.
- 15 a Describe about Sanger's method of DNA sequencing.  
OR  
b What is PCR? Write the methods of PCR.

**SECTION - C (30 Marks)**

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Answer any **THREE** Questions

**ALL** Questions Carry **EQUAL** Marks (3x10 = 30)

- 16 Describe about any two methods of joining DNA fragments to vectors.
- 17 Explain about pUC 18 with illustration.
- 18 Describe the details about eukaryotic host vectors.
- 19 Write about the screening and construction of cDNA library from mRNA.
- 20 Explain Northern blotting method.