

No. of Printed Pages : 03

Roll No. ....

**061**

**Ph. D. Course Work  
EXAMINATION, Dec. 2018**

(First Semester)

BT

BIOTECHNOLOGY

BT902

advances in Microbial Biotechnology

*Time : 3 Hours]*

*[Maximum Marks : 100*

---

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

---

**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

**(1-09) M-061**

**P.T.O.**

### **Unit I**

1. Give a detailed comparative account of gene transcription and post transcriptional modifications in prokaryotes and eukaryotes. **20**
2. Discuss the significance of mapping during sequencing of whole genomes. Describe the different genetic and physical mapping techniques used for generating genome maps. **20**
3. Write notes on the following : **4×5=20**
  - (a) Role of different proteins in cell cycle regulation
  - (b) Mechanism of oxidative stress
  - (c) Lac and trp operon
  - (d) Molecular evolution.

### **Unit II**

4. Describe the major phenomenon involved in origin and sequential evolution of present-day microorganisms. Also comment upon the huge microbial diversity available on earth. **20**

5. Describe in detail the various nucleic acid techniques involved in microbial disease diagnosis. **20**

### **Unit III**

6. With the help of suitable examples, describe how recombinant DNA technology has helped in genetic improvement. **20**
7. Discuss how genetically engineered microorganisms have revolutionized the field of industrial microbial technology. **20**
8. Discuss the role of microorganisms in production of : **2×10=20**
  - (a) Antibiotics and pharmaceutical products
  - (b) Biodegradable plastics.