9. Discuss any *three* of the following :

(a) Metabolite flow modification in metabolic pathway

(b) Production of Golden rice through gene cloning for diverse system.

(c) Transformation of Antibiotics.

(d) Biomineralization. **3×5=15**

18BB1954

M. Sc. EXAMINATION, May 2019

(Second Semester)

(C Scheme) (Main Only)

BIO-TECHNOLOGY

BT508MSC

Industrial Biotechnology

Time : 3 *Hours*] [*Maximum Marks :* 75

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 : Q. No. **1** is compulsory. Attempt rest *four* questions by selecting atleast *one* question from each Unit. All questions will carry equal marks.

1. Write brief notes on the following :

(i) Stability of Beer and Wine.

(ii) Extraction of Uranium from ore by microorganisms

(iii) Chemical bases of point mutations

(iv) Gene profiling methods

(v) Expression and cloning vectors. **5×3=15**

Unit I

2. Discuss the choice of recombinant vector used for the industrial production of :

(a) HBS-Ag.

(b) Amylase

(c) Cellulase. **3×5=15**

3. Describe the various modes for the selection of mutants involving in the production of industrially important chemicals. Cite examples. **15**

Unit II

4. Discuss the process technology involved in the production of Beer and Wine. **15**

5. Write notes on the following : **7+8=15**

(a) Production of amino acids.

(b) Sterilization of industrial fermenter.

Unit III

6. What is Enzyme Stability ? Discuss the methods used to increase the stability of enzymes produced through microbial-source. **15**

7. Discuss the purification of Enzymes through :

(a) Ion exchange chromatography

(b) Gel filtration chromatography. **7+8=15**

Unit IV

8. Metabolomics and microbial gene profiling mediated through molecular biological techniques. Explain these techniques briefly used for the expression of novel genes through microbial systems by giving examples. **7+8=15**