

**2015**

**2nd Semester P.G. Diploma in**

**Quality Control and Assurance in Microbial Technology**

**GENETIC ENGINEERING**

**PAPER—QUA-201**

*Full Marks : 50*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**Group—A**

*(Marks : 25)*

Answer any *five* questions from each group.

1. What are ELISA plates with antigen-coated wells used to measure? What is the importance of blocking step of ELISA plate preparation? 3+2
2. What is Isoelectric Focussing? What is used to make the pH stable during protein separation? What does the protein do when it gets to its pI? 2+1+2

*(Turn Over)*

3. Write the basic principles of Ion-exchange Chromatography. What is the role of salt concentration in affinity chromatography? 3+2
4. (i) Briefly describe how to build a 'knockout' mouse?  
(ii) Distinguish between GLP and GNP.  $2\frac{1}{2} + 2\frac{1}{2}$
5. (a) What is the significance of the term 'prior-art' in a patent document?  
(b) What is the importance of 'claims' in a patent document? 2+3
6. (a) What is the significance of the term 'biosafety'?  
(b) What are the major objectives of Biosafety Regulations? 2+3
7. Give reasons why in the industrial applications of recombinant DNA, biosafety regulations are applicable to both products and processes. 5

**Group—B**

(Marks : 25)

Answer any *five* questions from each group.

1. What agencies define standards and regulations for the microbiological quality of foods?  
Describe the major laboratory procedures used for the microbiological examination of food. 2+3
2. Describe several types of food spoilage and identify the micro-organisms responsible in each case. 5
3. Describe the process by which a fermented vegetable product, such as Saucer Kraut, is made, with particular attention to microbiological event. State the role of micro-organisms in the manufacture of a ripened cheese? 4+1
4. Define malting and adjunct. Prepare a flow chart for the production of beer from malt through microbial fermentation. 2+3
5. What are Bioinsecticides? State the art of killing of Lepidoptera by *Bacillus thurengensis*. 1+4
6. Mention the advantages of liquid biofertilizer over biofertilizer. Mention the steps of production of Azolla. 5

7. Write short notes on (any two) :

$2\frac{1}{2} \times 2$

- (i) Probiotics ;
  - (ii) Radiation ;
  - (iii) Baker's Yeast.
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