

**2016**

**2nd Semester P.G. Diploma in  
Quality Control and Assurance in Microbial Technology**

**QCAMT**

**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.*

*Answer any five questions from each group.*

**Group—A**

**(Marks : 25)**

*Answer any five questions.*

1. (a) Who is responsible for administration of biosafety regulations in India? 1
- (b) What is RIA? State its principle. 2+2

*(Turn Over)*

2. Describe the main features of quality control for recombinant DNA based products. 5
3. What are the major characteristics of a plasmid for consideration as a suitable cloning vector? Name four cloning vectors. 3+2
4. What are the basic principles of Gel-filtration chromatography? A purified protein sample contains 10  $\mu\text{g}$  of protein and has an enzyme activity of 1 m mole of ATP Synthesized/sec (1 unit). What is the specific activity of the purified sample? 3+2
5. Briefly describe the production of insulin through Recombinant DNA Technology. 5
6. (a) Which is the most commonly used culture medium for plant and animal cells? 2  
(b) Name few compounds used as cryoprotectants. 2  
(c) Define — Explant and Callus culture. 1
7. Write short notes (any two) :  $2 \times 2\frac{1}{2}$ 
  - (a) Good Large Scale Practice (GLSP) ;
  - (b) Intellectual Property Rights (IPR).

**Group—B**

(Marks : 25)

Answer any *five* questions.

1. Discuss the process of Commercial production of nitrogenous biofertilizer. 5
2. Distinguish between probiotics & prebiotics with examples. 5
3. What is single cell protein (SCP) ? Discuss the production process of any such (SCP). 5
4. Outline at least three methods of food preservation. How does each method control growth of microorganisms ? 5
5. Mention the principle of food preservation. Which would you expect to spoil faster : a food with a high water activity or food with low water activity ? Why ? 3+2
6. Write the protocol for the production of wine. Differentiate between ale and lager beer. 3+2

7. Write notes on :

$$2\frac{1}{2} + 2\frac{1}{2}$$

- (i) Malting process ;
  - (ii) Sterilization of antibiotics.
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