

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, AUGUST 2006

Microbiology

Paper VI—INDUSTRIAL MICROBIOTECHNOLOGY CONCEPT AND DESIGN

Time : Three Hours

Maximum : 80 Marks

Section.A

I. Answer *all* questions in 2 *or* 3 sentences :

- 1 Dimensionless groups.
- 2 Solvent extraction.
- 3 Freeze drying.
- 4 Secondary screening.
- 5 Yield coefficient.
- 6 Statistical models in media designing.
- 7 Oxygen transfer coefficient.
- 8 Air lift **fermentors**.
- 9 **Antifoam** agents.
- 10 Valves used in **bioreactors**.
- 11 **Methanogenesis**.
- 12 Substrate affinity and substrate saturation constant.
- 13 **Auxotrophic** mutants.
- 14 Enrichment culture.
- 15 **Protoplast** fusion.
- 16 Continuous Stirred Tank Reactors (**CSTR**)
- 17 Salting out technique.
- 18 Enzyme engineering.
- 19 Sterilization in fermentation industry
- 20 Single cell protein.

(20 x 2 = 40 marks)

Section B

II. Write notes on any *five* of the following :—

- 1 Gassing out method for determining volumetric oxygen transfer coefficient.
- 2 Instrumentation in **Bioreactors**.
- 3 Methods of strain improvement.
- 4 Chromatographic methods in downstream processing.
- 5 Detection and assay of fermentation products.
- 6 Designing of fermentation media.
- 7 Cell disruption methods.

(5 x 8 = 40 marks)

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Name

Reg. No.....

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microbiology

MB 2-2 T—IMMUNOLOGY

(2005 admissions)

Time : Three Hours

Maximum 80 Marks

Section A

*Write about/Answer all the questions each in 2 or 3 sentences.**Each question carries 2 marks.*

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|------------------------------------|------------------------------|
| 1. IgM. | 2. Hybridoma technology. |
| 3. Super antigens. | 4. Hinge region. |
| 5. B cells, | Lymphokines. |
| 7. Thymus, | 8. Radial immune di |
| 9. Paul-Bunnell test. | 10. Primary immune response. |
| 11. GVH reaction. | 12. Monovalent antibodies. |
| 13. Reverse passive agglutination. | 14. Atopy. |
| Immunofluorescence. | 16. Opsonins. |
| 7. Zone phenomenon. | 18. Contact dermatitis. |
| MHC. | 20. Adjuvants, |

(20 x 2 = 40 marks)

Section B

*Write notes on or discuss any five of the following.**Each question carries 8 marks.*

21. Delayed hypersensitivity.
22. ELISA.
23. Cell mediated immunity
24. Structure of immunoglobulins.
25. Rheumatoid Arthritis.
26. Complement_
27. Immunodeficiency diseases.

(5 x 8 = 40 marks)