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BG—18—2016

FACULTY OF SCIENCE

B.Sc. (Third Year) (Fifth Semester) EXAMINATION

OCTOBER/NOVEMBER, 2016

(Revised Course)

BIOTECHNOLOGY

Paper (BTT-5.3)

(Bioprocess Engineering)

(Wednesday, 23-11-2016)

Time : 10.00 a.m. to 1.00 p.m.

Time—3 Hours

Maximum Marks—80

N.B. :— (i) Attempt All questions.

(ii) Draw well labelled diagrams wherever necessary.

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|-----------|-----|--|----|
| 1. | (a) | Describe welding and surface treatment for fermenters. | 10 |
| | (b) | Explain the concept of biotransformation. | 10 |
| 2. | (a) | Explain batch sterilization. | 8 |
| | (b) | Describe estimation and quantification of media. | 7 |
| <i>Or</i> | | | |
| | (a) | Explain continuous sterilization. | 8 |
| | (b) | Explain air sterilization. | 7 |
| 3. | (a) | Describe fed-batch culture. | 8 |
| | (b) | Describe measurement and control of CO ₂ . | 7 |
| <i>Or</i> | | | |
| | (a) | Explain the methods of enzyme immobilization. | 8 |
| | (b) | Describe strategies for fermentation control. | 7 |
| 4. | (a) | Describe GMP. | 8 |
| | (b) | Describe KLa | 7 |

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Or

- (a) Describe quality control. 8
- (b) Describe the factors used in scale-up. 7
- 5. Write notes on (any *three*) : 15
 - (i) Types of impellers
 - (ii) Quality assurance
 - (iii) Costing of media
 - (iv) Measurement of pH
 - (v) Testing and validation of filters.