

This question paper contains **2** printed pages]

**BG—5—2016**

**FACULTY OF SCIENCE**

**B.Sc. (Second Year) (Third Semester) EXAMINATION**

**OCTOBER/NOVEMBER, 2016**

**(Revised Course)**

**BIOTECHNOLOGY**

**Paper I**

**(Metabolism)**

**(Friday, 18-11-2016)**

**Time : 2.00 p.m. to 5.00 p.m.**

*Time—3 Hours*

*Maximum Marks—80*

*N.B. :— (i) All questions are compulsory.*

*(ii) Draw neat and well labelled diagrams whenever necessary.*

- |    |     |  |    |
|----|-----|--|----|
| 1. | (a) | Write in detail about EMP pathway.                                   | 10 |
|    | (b) | Discuss about electron transport chain.                              | 10 |
| 2. | (a) | Write in detail about mathematical expression for activation energy. | 8  |
|    | (b) | Write TCA cycle.   | 7  |
|    |     | <i>Or</i>  |    |
|    | (c) | Explain chemo-osmotic theory.  | 8  |
|    | (d) | Discuss the role of carnitine in fatty acid oxidation.               | 7  |
| 3. | (a) | Add a note on concept of redox potential.                            | 8  |
|    | (b) | Write in brief about ED pathway.                                     | 7  |
|    |     | <i>Or</i>  |    |
|    | (c) | Explain the types and mechanism of photophosphorylation.             | 8  |
|    | (d) | Explain about oxidative and non-oxidative deamination.               | 7  |
| 4. | (a) | Write in brief about oxidation of unsaturated fatty acid.            | 8  |
|    | (b) | Write the difference between endergonic and exergonic processes.     | 7  |

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Or

- (c) Explain ED Pathway. 8
- (d) Explain Urea Cycle. 7
5. Write short notes on (any *three*) : 3×5=15
- (a) 1st law of thermodynamics
- (b) Substrate level phosphorylation
- (c) Transamination
- (d) Odd carbon fatty acid oxidation
- (e) ATP synthetase.

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