

# B.Sc.(N) [Post Basic (1<sup>st</sup> Year)]

BF/2012/08

## Biochemistry & Biophysics

[New Scheme-w.e.f. 2007 admission]

M.M. : 75

Time : 3 Hours.

Note: Attempt all the questions.

Support your answer with neat diagrams and illustrations.

**USE SEPARATE ANSWER SHEETS FOR EACH SECTION.**

### SECTION-A

[38 marks]

#### (Biochemistry)

- |    |     |   |      |
|----|-----|---|------|
| 1. | (a) | What are fats ?   | [1½] |
|    | (b) | How are fats synthesized in body ?                        | [4½] |
|    | (c) | Discuss the utilization of ketone bodies within our body. | [4]  |

**OR**

- |    |     |   |      |
|----|-----|---|------|
| 1. | (a) | What are Proteins ?   | [2]  |
|    | (b) | Discuss mechanism of protein synthesis in a cell.                             | [4]  |
|    | (c) | Discuss briefly catabolism of carbohydrates for energy purposes.              | [4]  |
| 2. | (a) | What is digestion ?   | [1½] |
|    | (b) | Discuss the factors effecting the digestion and absorption.                   | [4]  |
|    | (c) | Discuss briefly digestion and absorption of proteins, carbohydrates and fats. | [4½] |

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|----|--|---------|
| 3. | <b>Distinguish briefly (Any TWO) :</b> | [2x3=6] |
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|-----|--|--|
| (a) | Kreb's cycle and urea cycle.                   |  |
| (b) | Soft and hard water.                           |  |
| (c) | Amino acids and fatty acids.                   |  |
| (d) | Intracellular and extra cellular electrolytes. |  |

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|----|---|----------|
| 4. | <b>Write Short Notes on any FOUR of the following :</b> | [4x3=12] |
|----|---|----------|

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|-----|--|--|
| (a) | Functions of Human cell.                                       |  |
| (b) | Diagnostic significance of enzymes.                            |  |
| (c) | Water and electrolyte balance.                                 |  |
| (d) | Role of thyroxine in our body.                                 |  |
| (e) | Significance of cholesterol and its adverse effects on health. |  |

### SECTION-B

[37 marks]

#### (Biophysics)

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|----|-----|--|-----|
| 1. | (a) | What is sound ?  | [2] |
|    | (b) | What are the various diagnostic applications of sound waves ?  | [4] |
|    | (c) | Describe the mechanism of flow of electricity in electrolytes. | [4] |

**OR**

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|----|-----|--|------|
| 1. | (a) | What is atomic energy ?  | [2]  |
|    | (b) | Discuss briefly protection of radiations in terms of units and limits.   | [4]  |
|    | (c) | Name the instruments used for detection of ionising radiation. List the precautions for handling radioactive isotopes. | [4]  |
| 2. | (a) | Define heat. List down its units of measurement.   | [2½] |
|    | (b) | Discuss the common applications body mechanics in transferring a patient from bed to wheel chair.                      | [2½] |
|    | (c) | Discuss the uses of common equipments applied in patient care.   | [5]  |

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| 3. | <b>Distinguish briefly (Any TWO) :</b> | [2x2½=5] |
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|-----|---|-----|---------------------|
| (a) | Ocular pressure and Intra cranial pressure. | (b) | Isotope and Isobar. |
| (c) | Vocalisation and hearing.                   | (d) | Weight and mass.    |

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| 4. | <b>Explain any FOUR :</b> | [4x3=12] |
|----|---------------------------|----------|

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|-----|--|--|
| (a) | Defibrillation.  |  |
| (b) | Relationship of simple mechanics in pulley and traction. |  |
| (c) | MRI Scanning.  |  |
| (d) | Newton's third law of motion.                            |  |
| (e) | Units of measurement of force and energy.                |  |
| (f) | Transfer of heat through matter.                         |  |