

**B.N. Bandodkar college of Science, Thane**  
**Semester IV Examination 2014**  
**F.Y.B.Sc. [USBC201]**

Duration 2 hrs

Marks 60

**N. B. :**

1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Use of log table/ non programmable calculator is allowed.

**Q.1 Answer the following:**

- a Draw the structures of a) palmitic acid , b) oleic acid c) linoleic acid d) lauric Acid. 4
- OR**
- a Write a note on complex lipids. 4
- b What is a lipid and write its functions? 4
- OR**
- b Explain properties of TAG. 4
- c Write short note on a) phosphatidic acid b) phosphatidylcholine. 4
- OR**
- c Explain iodization and ozonolysis. 4
- d Give one example of phosphosphingolipids, cerebrosides and phospholipid. 3
- OR**
- d Define -MUFA and PUFA. 3

**Q.2 Answer the following:-**

- a Describe the structure of DNA with a neat labeled diagram. 4
- OR**
- a Write a note on different types of RNA. 4
- b Distinguish between different forms of DNA helix structure. 4
- OR**
- b Write an account of structure, and nomenclature of nucleotides. 4
- c "The backbone of nucleic acid structure is 3'-5'phosphodiester bridge."-justify 4
- OR**
- c Describe the structure of nitrogenous bases present in DNA. 4
- d What are nucleosides? Write its structure. 3
- OR**
- d How many base pairs are present in each turn (pitch) of B-form of DNA helix? 3

Q. 3

**Answer the following:**

- a Write a note on 'factors affecting BMR'. 4

**OR**

- a Define joule. What is BMI of a person having weight 60kg and his height is 5feet and 4 inches. 4

- b Explain BV and PER. 4

**OR**

- b Explain the nutritional significance of vitamins. 4

- c Write the formula of Harris-Benedict equation and Mufflin equation for calculating BMR. 4

**OR**

- c Explain energy requirements of body in terms of sedentary, moderate. 4

- d What is BV and PER 3

**OR**

- d Give nutritional significance of fats. 3

Q. 4

**A Answer the following:**

- a What is amino peptidase? 3

**OR**

- a Write the reaction of enzymatic cleavage of TAG.

- b Draw the structure of ATP.

**OR**

- b Which pyrimidine base contains an amino group at carbon 4?

- c What is DIT?

**OR**

- c What is the range of BMI for healthy person?

**B Answer the following:**

- a Explain Reichert-Meissel number and significance of acid value. 12

**OR**

- a Draw schematic diagram of Bloor classification of lipids.

- b Write a note on effect of heat on viscosity of DNA?

**OR**

- b Explain hydrogen bonds in DNA with neat labeled diagram.

- c Explain the significance of BMR in clinical diagnosis.

**OR**

- c A male of 50 years weighs 70 kg, having height of 6 feet 1 inch. Calculate its BMR.

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