

B.N. Bandodkar College of Science, Thane
IInd Semester End Examination March 2015

USBC 201

Duration: 2 hrs and 30 mins

MaxMarks-75

N.B 1) All Questions are compulsory.

2) Draw neat and labeled diagrams wherever necessary

3) Figures to right indicate full marks.

Q.1) A) Answer the following (Each question carries 4 marks)

20

a) What are lipids? Describe its physiological function.

OR

a) Explain Bloor's classification of lipids.

b) Write four names of any unsaturated fatty acids.

OR

b) Write the systemic names of i) propionic acid ii) capric acid iii) acetic acid
iv) butyric acid

c) Explain the properties of triacylglycerol.

OR

c) Give the general structures of acylglycerols.

d) What is the action of heat on glycerol and choline?

OR

d) Explain the process of saponification.

e) Write a short note on sphingomyelins.

OR

e) Explain the structure and function of cholesterol in human body.

Q.2) B) Answer the following (Each question carries 4 marks)

20

a) Describe in brief about Watson and Crick model of DNA.

OR

a) Explain in detail each property of DNA.

b) What is RNA? Describe each type in detail.

OR

b) Distinguish between DNA and RNA.

c) Draw the structures for nitrogen bases required in DNA.

OR

c) Give the functions of DNA and RNA.

d) Write the structures for nitrogen bases found in RNA.

OR

d) What are nucleic acids and explain each component in detail?

e) Explain the formation of polynucleotide strand and the formation of shorthand representation of DNA.

OR

e) Give the nucleotides and nucleosides for:

i)adenine ii)guanine iii)cytosine iv)thymine

Q.3) Answer the following (Each question carries 4 marks)

20

a) Explain the nutritional significance of vitamins.

OR

a) Give the energy requirements for sedentary and heavy activities.

b) Define BMR and explain the conditions under which BMR can be measured.

OR

b) Draw a neat and labeled diagram of a food calorimeter. Also, define the term 'calories'.

c) Give the diet plan for a school going child.

OR

c) Give the diet plan for an obese individual.

d) Explain the term BMI. Give the formula for measuring BMI and give its normal range.

OR

d) An individual consumes 800 mg of fats, 7 g of proteins and 10 g of carbohydrates. Calculate the amount of calories gained from this diet.

e) The height of an individual is 175 cm and weight is 63 kg. Calculate the BMI and interpret the results.

OR

e) Give two examples of each: i) Carbohydrate rich food
iii) Iron rich food

ii) Protein rich food
iv) Calcium rich food.

Q.4) A) Answer the following.(Each question carries 3 marks)

15

a) Write a short note on phosphatidylcholine.

OR

a) What is Reichert-Meissel number?

b) What do you mean by T_m of DNA?

OR

b) What is hyperchromicity of DNA?

c) Give the nutritional significance of water.

OR

c) What does the term SDA mean? Give its significance.

Q.4) B) Answer the following. (Each question carries 2 marks)

a) What is ozonolysis?

OR

a) What is rancidity?

b) Give the names of any two minor bases found in DNA.

OR

b) What is Chargaff's rule?

c) Name any two lipids and give one function of each.

OR

c) Explain the importance of consumption of dietary factors.