PG (NEW) CBCS

M.Sc. Semester-I Examination, 2019

NUTRITION & DIETETICS

PAPER: NUD-102

(BIOPHYSICAL AND BIOCHEMICAL ASPECT OF NUTRITION)

Full Marks: 40 **Time: 2 Hours**

Write the answer for each unit in separate sheet

Unit-3

(Biophysical Aspect of Nutrition)

Group-A

1. Answer any two of the following questions: **2×2=4**

a) Define entropy.

b) What do you mean by sedimentation coefficient?

c) Write down the composition of bicarbonate buffer.

d) write the applied value of electrophoretic mobility?

Group-B

2. Answer any two of the following questions: **2×4=8**

a) What is Gibb's free energe? Briefly describe the first law of thermodynamics. 1+3

b) Write down the basic differences of native PAGE and SDS-PAGE.

c) What is van slyke's buffer value? Write down the biological significance of PH. 1+3

d) What are the mobile and stationary phases in the normal phase HPLC? Write down the application of HPLC. 1+3

Group-C

3. Answer any one of the following questions: **1×8=8**

a) State the function of APS, TEMED, and SDS in SDS-PAGE.

How do you determine the molecular weight of a DNA in Agarose gel electrophoresis?

Why the tracking dye is incorporated in the loading buffer? 3+3+2

b) What is relative centrifugal force(RCF)? Write down the importance of RCF. Briefly describe the applications of different types of centrifugation. 1+2+5

(Turn Over)

Unit- 4

(Biochemical Aspect of Nutrition)

Group-A

1. Answer any two of the following questions: **2×2=4**

a) Which bonds are responsible for stabilizing the tertiary structure of protein?

b) Write down the function of mRNA.

c) How do you convert glucose to fructose?

d) What is iodine number?

Group-B

2. Answer any two of the following questions: **2×4=8**

a) Write down the differences between B-DNA and Z-DNA.

b) What is protein motif? Briefly describe any one of them with diagram. 1+3

c) What are essential fatty acids? Why unsaturated fatty acids have lower melting point than saturated fatty acids. 2+2

d) Write down the importance of carbohydrate.

Group-C

3. Answer any one of the following questions: **1×8=8**

a) How do organic solvents, reducing agents, strong acids, and heat denature the protein structure? How does the high salt concentration affect the protein solubility? What is conjugated protein? Give an example. 4+2+2

b) Write down the structure of a phospholipids in general. What is linking number? Write a short note on tRNA. 3+1+4

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