

First Semester Examination-2017**M.Sc. NUTRITION & DIETETICS**

Paper Code: NUD-102

Full Marks : 40

Time: 2 Hours

Write the answer for each unit in separate sheet**Unit-III****Answer question no.1 & any 3 from the rest**

- 1. Answer any five from the following: 1×5= 5**
- i) In FIGE, the shape of the DNA band in gel is-
- a) L- Shaped b) U- Shaped
c) O- Shaped d) J- Shaped
- ii) Agarose gel having the 0.8% agarose is generally used for the separation of DNA double strand having the length of
- a) Less than 100 bp length
b) > 100 bp length upto 25,000 bp length
c) > 25,000 bp length upto 20,00,000 bp length
d) > 20,00,000 bp length
- iii) In SDS- PAGE electrophoresis, the separating and stacking gel buffer having the pH respectively
- a) 8.8 and 6.8 b) 6.8 and 8.8
c) 7.8 and 6.8 d) 6.8 and 7.8
- iv) One SDS can able to bind with how many amino acids
- a) One b) Two
c) Three d) Four
- v) Microsomes are separated by centrifugation having the criteria of
- a) 3,00,000 g for 2 hour b) 15,000g for 5 min
c) 1,00,000 g for 1 hour d) 600 g for 10 min
- vi) In paper chromatography, the amino acid spot is stained by spraying-
- a) Ethidium Bromide b) Mercapto ethanol

- c) Ninhydrin
d) Coomassive brilliant stain
- vii) In cellular metabolism, the heat energy which is produced is known as-
- a) Enthalpy
b) Entropy
c) Free energy
d) Efficiency
- viii) Important buffer present in our blood involved in maintenance of acid-base balance is-
- a) Phosphate buffer
b) Bicarbonate buffer
c) Protein buffer
d) Haemoglobin- haemoglobinate buffer
2. a) What is Rf value in chromatograph?
b) What is the significance of heat generated in agarose gel due to current flow?
c) Write the principle of differential centrifugation? $1+2+2=5$
3. a) Write the role of SDS in SDS PAGE electrophoresis.
b) Write the site of binding of Ethidium bromide with double stranded DNA.
c) What do you mean by ascending and descending paper electrophoresis?
 $2+1+2=5$
4. a) Write the formula for computation of RCF from RPM.
b) Describe the technique for the collection of DNA from gel.
c) Write the technique for the detection of DNA bands in agarose gel.
 $1.5+1.5+2=5$
5. a) Write the first law of thermodynamics.
b) State the application of enthalpy in our body
c) Define entropy and its application in our body. $1.5+1.5+(1+1)=5$
6. a) Write the deduction of H-H equation.
b) What do you mean by pH and PKA?
c) State the role of bicarbonate buffer to maintain acid base balance.
 $2+1+2=5$

- viii) All the following are omega 6 fatty acids except
- a) Linoleic acid b) α linolenic acid
- b) γ linolenic acid d) Arachidonic acid
9. a) What are free sugars?
b) Write the sources of free sugars.
c) What is meant by resistant starch? 1+2+2
10. a) What is incomplete protein?
b) Give example of incomplete protein.
c) Write the important functions of protein. 1+1+3
11. a) What is peptide bond?
b) Mention important features of α helix structure of protein.
c) What is derived protein? 2+2+1
12. a) Differentiate between structural lipid and storage lipid.
b) What is mixed triglyceride?
c) What is meant by acid number? 2+2+1
13. a) What are the building blocks of DNA?
b) State determinants of GMP and AMP synthesis?
c) Mention the feedback / feed forward regulation of purines. 1+2+2
14. a) What is PRPP?
b) Distinguish between
i. Nucleotide and nucleoside
ii. Ribonucleotide and Deoxyribonucleotide. 1+2+2
