

2016

M.Sc.

3rd Semester Examination

CLINICAL NUTRITION & DIETETICS

PAPER—CND-301

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q.No.1 and any *three* question from the rest.

1. Answer any *ten* questions : 10×1

- (i) Iron contain in rice can be increased by —
- (a) By mixing iron with rice cereals ;
 - (b) By increasing absorption of iron from soil ;
 - (c) By transgenic rice through inclusion of Ferritin/transferin gene ;
 - (d) By inclusion of Iron gene.

(Turn Over)

- (vii) To study the tissue marker for the study of disease diagnosis, the important technique is —
- (a) PAS ; (b) ABC ;
(c) ISNT ; (d) ISH.
- (viii) To study the DNA breakage, we use following nucleotide as marker —
- (a) dATP ; (b) UTP ;
(c) dUTP ; (d) dCTP.
- (ix) Metabolomic study of Phenylketonuria is —
- (a) Southern blotting of Phenylalanine hydroxylase DNA ;
(b) Western blotting of Phenylalanine hydroxylase ;
(c) Plasma level of Phenylalanine ;
(d) Plasma level of tyrosine.
- (x) The study of the molecular organization of genomes, their information content and the gene products they encode —
- (a) genetics ; (b) genomics ;
(c) ergonomics ; (d) Epigenomics.
- (xi) The goal of — is to determine the location of specific gene within the genome —
- (a) Cloning ; (b) Annotation ;
(c) Proteomics ; (d) Metabolomics.

- (xii) The minimum set of genes required for life is approximately —
- (a) 50 - 100 genes ; (b) 250 - 300 genes ;
(c) 1000 - 1500 genes ; (d) 2000 - 2500 genes.
- (xiii) Proteomics is —
- (a) A branch of quantum physics ;
(b) The study of entire collection of proteins expressed by an organism ;
(c) The study of entire collection of RNAs expressed by an organism ;
(d) The study of algal genome.
- (xiv) Which type of genomics studies the transcripts and proteins expressed by a genome ?
- (a) Comparative genomics ; (b) Structural genomics ;
(c) Functional genomics ; (d) Bioinformatics.
- (xv) Genomics is the study of genomes. Genome refers to :
- (a) Total DNA of an organism ;
(b) Total DNA and RNA of an organism ;
(c) entire genes of an organism ;
(d) Total RNA, DNA and CDNA of an organism.

2. (a) What do you mean by epigenetics ?
(b) Write the major process of epigenetics.
(c) 'Epigenetics of oncogene can be influenced by dietary ingredients' — Justify the statement citing one example.

2+2+6

3. (a) What do you mean by ISEL ?
(b) Why ISNT is more sensitive than ISEL for DNA break or Nick study ?
(c) State the fundamental working protocol of ISEL study.

2+2+6

4. (a) 'Fatty acid oxidase gene expression is controlled by Vit-A and ω -3 FA in diet'. Discuss the statement from the view point of nutrient gene interaction.
(b) 'q-PCR is more reliable and valid sensor than routine PCR for the study of gene expression' — Establish this statement critically.
(c) What do you mean by 'Northern Blotting'?

5+3+2

5. (a) What is transcriptomics ?
(b) What do you mean by nutrigenomics ?
(c) What are the different mechanisms by which nutrients can influence gene expression ?
(d) Role of different micronutrients for regulation of gene expression.

2+2+3+3

6. (a) What do you mean by glycemic index ?
(b) Why glycemic index is important ?
(c) Write the effect of high glycemic index food on human health.
(d) Write the effect of GI food on neural tube disorder.

2+2+3+3
