2015

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 : 1×10

(a) Gene imprintation by nutrient is the example of–

(i) Genetics ; (ii) Genomics ;

(iii) Eugonics ; (iv) Epigenetics ;

(b) Serum is the best biological sample for the study of–

(i) Genomics ; (ii) Proteomics ;

(iii) Metabolomics ; (iv) Transcriptomics ;

(c) The most important cause that interfere gene expresion study in thermocycler known as—

(i) Incomplete elengation of the chain ;

(ii) Primer dimer ;

(iii) Defective annealing ;

(iv) Incomplete melting.

(d) One of the method for nitrogen base sequence study in gene known as—

(i) Waston method ; (ii) Sanger's method ;

(iii) Crick's method ; (iv) Gibb's method ;

(e) dd WTPs are used in nitrogen base sequence study of gene on the basis of its function known as—

(i) Controlled termination of chair elongation ;

(ii) Controlled cleavage ;

(iii) Controlled base pairing ;

(iv) Uncontroned chain elongation.

(f) Hexokinase level is changed in the advanced stage of diasetes than the early stage which is the example of—

(i) Genomic study ; (ii) Metabolomic study ;

(iii) Proteomic study ; (iv) Entyme kinetic study.

(g) Flavonoids of plants modify gene expression by interacting with—

(i) SRE ; (ii) TSE ;

(iii) ARE ; (iv) TSS.

(h) W-3 fatty acid modify gene expresion by formation of ligand with—

(i) RXR ; (ii) PXR ;

(iii) SXR ; (iv) LXR.

(i) Food components that increase blood cholesterol through—

(i) Lipase gene ; (ii) Cholesterol esterase gene ;

(iii) FH gene ; (iv) T r P gene.

(j) In connection to genetic research ELSI stands for—

(i) Etfective, legal, social, impact ;

(ii) Ethical, legal, and social implication ;

(iii) Ethical, legal and standard impact ;

(iv) Effective legal and summated impact.

(k) What do you mean by metabolomics ?

(l) What is meant by glycemic index ?

(m) Name the disorder that occurs in fetus due to excess consumption of food with high glycemic index by mother.

(n) What is transcriptomics ?

(o) Write the name of any one micronutrient deficiency of which causes cancer by modnlating gene expression.

2. (a) Write the application of ritrogen base sequence study in nutrogenomics.

(b) Describe briefly any one method of nitrogen base sequence study of a gene.

(c) Suppose a gene consist of 10 nitrogen base sequence. Determine the nitrogon base seauence using the following information—

(i) Dinucleotide prioner is TA ;

(ii) 1st test tube with dd ATP, we got 7 and 10 nucleotide chain length ;

(iii) 2nd test tube with dd TTP, we got 5 and 8 nucleotide chain length ;

(iv) 3rd test tube with dd CTP, we got 3 and 6 nucleotide chain length ;

(ix) 4th test tube with ddGTP, we got 4 and 9 nucleotide chain length. 2+4+4

6. (a) What is meant by genomics ?

(b) Describe how cholesterol regulates its own uptake and synthesis by modulating gene expression.

(c) Discuss the role of folic acid in modulation of different gene expression. **2+5+3**

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3. (a) State the applied value of nutrigenomics.

(b) Write any possible three avenues through which nutrients can modify the 'Switch off' the specific gene.

(c) State the role of vitamin A or obesity management through gene expression. 3+3+4

4. (a) State the limitation of Genomic and proteomic studies for health maintenance giving emphasis on influence of nutrients.

(b) "Metabolomic study is one of the effective cellular level study for disease diagnosis in the light of the nutrient's role & justify the statement.

(c) Write an example of metabolomic study for diabetic disease diagnosis 5+3+2

5. (a) "Proteomics is more complex than genemics and transcriptomics'— justify.

(b) Discuss different types of post translational modification of protein in brief.

(c) State the basic principle of 'Western blot' and its application.