



PG (CBCS)
M.Sc. Semester- III Examination, 2023
NUTRITION AND DIETETICS
PAPER: NUD 303
(CONCEPT OF NUTRITIONAL GENOMICS & PROTEOMICS AND DRUG
& NUTRIENT INTERACTION)

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.

Write the answer for each unit in separate sheet

UNIT: 29

CONCEPTS OF NUTRITIONAL GENOMICS, PROTEOMICS AND METABOLOMICS

GROUP-A

Answer any **TWO** of the following questions: 2×2=4

1. Define the “Chargaff’s Rule”.
2. Define ‘Allele PCR and Multiplex-PCR’.
3. Which are the tertiary structures of DNA?
4. Name the different types of epigenetic modifications.

GROUP-B

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

1. Justify the statement, “Diet is an epigenetic regulator”.
2. Write comparison between ‘nutrigenomics’ and ‘nutrigenetics’.
3. Write four important applications of genetic engineering in the field of nutrition.
4. Discuss the requirements and the sequential steps pursued in a PCR reaction.

GROUP-C

Answer any **ONE** of the following questions: 1×8=8

1. What is “gene-diet interaction”? Explain the mechanism of gene-diet interaction with the examples of PUFA. How does epigenetic factors induce or prevent diabetes? 2+3+3
2. Discuss the process of c-DNA library of a particular gene. Describe the labelling of gene probes. 5+3

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**UNIT: 30****DRUG & NUTRIENT INTERACTION****GROUP-A**Answer any **TWO** of the following questions:

2×2=4

1. Define commensalism.
2. What do you mean by ED₅₀ & TD₅₀?
3. What do you mean by bioavailability of a drug?
4. List the name of enzymes that are responsible for drug biotransformation.

GROUP-BAnswer any **TWO** of the following questions:

2×4=8

1. State the common route of drug administration. Write a short note about first pass metabolism of a drug. 2+2
2. Discuss about the role of plasma protein on drug transportation. 4
3. Classify nutraceuticals with suitable examples. What is gut dysbiosis? 3+1
4. Discuss the role of probiotic on immunological activation. 4

GROUP-CAnswer any **ONE** of the following questions:

1×8=8

1. Write down the effect of nutrient on drug metabolism. What do you mean by plasma half-life of a drug. 5+3
2. Explain about the drug elimination with special reference to first order and zero order kinetics. State any two pharmacological importances of nutrients. 4+4
