

PG/FNCT/3rd Sem/21(CBCS)

2021

## FOOD AND NUTRITION

Paper : FNCT - 301

[Biochemistry]

(CBCS)

Full Marks : 40

Time : Two Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

### Instruction to Students for Page Limitation :

For each **two marks (02)** question : **Max. 1/3 page of an A4 paper;**  
for each **five marks (05)** question : **Max. 1<sup>1/2</sup> page of an A4 paper**  
(including figure / diagram, if any); **for 10 marks (10)** question : **Max.**  
**2<sup>1/2</sup> page** of an A4 paper (including figure/diagram, if any).

1. Answer any *five* of the following : 2×5=10
- (a) Define amylose and amylopectin.
  - (b) What are the functions of mucopolysaccharide ?
  - (c) What is the significance of Pentose Phosphate Pathway ?
  - (d) Write a short note on sickle cell anemia.
  - (e) Why is the Krebs cycle aerobic ?
  - (f) Why do NADH and FADH<sub>2</sub> involve in different amounts of ATP production ?

(g) What is melting temperature of DNA ?

(h) What is isoelectric point ?

2. Answer any *four* questions of the following : 5×4=20

(a) Write a note on protein glycosylation.

(b) Explain parallel and antiparallel beta sheet in protein structure.

(c) What is the meaning of 3' → 5' and 5' → 3' in DNA strand ? Explain with figure.

(d) What types of interaction hold the tertiary structure of protein together ?  
What is the importance of tertiary structure of a protein ?

(e) Explain phospholipid structure and how it makes plasma membrane ?

(f) How is one molecule of water formed in electron transport chain ?

3. Answer any *one* of the following : 10×1=10

(a) What is metabolic pathway ? Explain how many molecules of ATP are produced from one molecule of glucose during aerobic respiration. 2+8

(b) Explain allosteric modulation of enzyme. How do pH and temperature affect 3D structure of enzyme and its activity ? 4+6

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