

2013

M.Sc.

1st Semester Examination

NUTRITION & DIETETICS

PAPER—NUD-102

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.

Module—I

[Marks—20]

1. Answer any *five* questions of the following : 1×5
- (a) Write the contribution of Martin and Syнге.
 - (b) Write one application of ultrafiltration in the field of nutritional science.
 - (c) What is sieving effect?
 - (d) Mention any one application of Coloumb's law.
 - (e) What is isoelectric pH?

(Turn Over)

- (f) Write the function of carbonic anhydrase in buffering system.
- (g) Where is ribosome ?
- (h) What is buffer capacity ?
2. (a) Derive Michaelis-Menten equation.
- (b) Briefly describe non-competitive inhibition of enzyme.
- 5+3

Or

- (a) What is chloride shift ?
- (b) Describe briefly about renal correction of acidosis and alkalosis.
- 2+(3+3)
3. (a) State the principle of SDS-PAGE.
- (b) State briefly the role of SDS in the separation of protein.
- (c) Write the application of TLC and paper chromatography in nutritional science.
- $3+2\frac{1}{2}+2\frac{1}{2}$

Or

- (a) How do you derive retention factors (Rf) of an advanced chromatographic system ?
- (b) What is Reverse-Phase HPLC ?
- (c) What is the difference between mobile phase and stationary phase ?
- 3+2+2

Module—II
[Marks—20]

4. Answer any *five* questions of the following : 1×5
- (a) Write the full form of IMP.
 - (b) Define apolipoprotein.
 - (c) What is xanthoma ?
 - (d) Write the name of the one carnitine transpolar molecule.
 - (e) Define oxidative phosphorylation.
 - (f) What is the site of ornithine cycle ?
 - (g) What do you mean by the term 'free fatty acid' ?
 - (h) What is Glycogenine ?
5. (a) What is the difference between Glycation and glycosylation ?
- (b) 'Adrenaline enhances muscle glycolysis from glycogen by activating glycogen phosphorylase through two cascade systems. — Elaborate the statement. 2+6

Or

- (a) Briefly state the significance of urea cycle.
- (b) State the function of arginosuccinate synthase in urea cycle.
- (c) What is deamination ? 4+2+2

6. (a) State the dual role of vitamin B₁₂ and folic acid on cardioprotection.

(b) What is gluconeogenesis?

5+2

Or

(a) Describe the ketone body formation by showing reaction steps with biochemical structure.

(b) Briefly state the factors regulating iron absorption.

5+2