PG/IS/CND-102/19

M.Sc. 1st Semester Examination, 2019

CLINICAL NUTRITION AND DIETETICS

PAPER —CND-102

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

1. Answer any *four* questions : 2 × 4

   (*a*) Name the two inhibitors of glycolysis.

   (*b*) Why TCA cycle is called amphibolic pathway ?

   (*c*) What do you mean by uncompetitive enzyme inhibition.

   (*d*) What is meant by central dogma of molecular biology ?

(*e*) Define Xenobiotics.

(*f*) What is lattice formation ?

(*g*) Name two fluoroprobes.

(*h*) Why John Porter and Millington Synge is famous for their invention ?

2. Answer any *four* questions : 4×4

(*a*) Deduce the Michelis-Menten equation. 4

(*b*) Write the regulation of TCA cycle. 4

(*c*) What are the different functional class of enzyme ? Give example. 4

(*d*) How NADPH produce in pentose phosphate pathway help in protecting cells against ROS ? 4

(*e*) Enumerate the principle of SRID ? What is the justification of using the term 'single redial' in SRID ? $2 + 2$

(*f*) How do you perform paper chromatography ? Mention its application. $2 + 2$

(g) Write the principle of differential centrifugation with diagramatic representation. 4

(h) What is rocket immunoelectrophoresis ? What is Himalayan fantasy ? 2 + 2

3. Answer any *two* questions : 8 × 2

(a) What are free radicals ? Write the name of four important reactive oxygen species. State the role of SOD and vitamin C to compat ROS. 2 + 2 + 4

(b) What is carnitine shuttle ? State the steps and energetics of β oxidation. 2 + 4 + 2

(c) Diagramatically show the functional parts of a flow cytometer. Which types of laser light is used in FACS ? How does FSC and SSC work in a flow cytometer ? 4 + 2 + 2

(d) Differentiate normal phase HPLC and reverse phase HPLC. What is retention time ? Give one example of stationary phase and mobile phase. 4 + 2 + 2