

2015

OLD

Part-I 3-Tier

NUTRITION

PAPER—I

(Honours)

Full Marks : 90

Time : 4 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.

Group—A

Answer any *two* questions, taking at least *one* from each of the following subgroups.

Subgroup—A(a)

1. (a) Draw the structure of haemoglobin molecule.
(b) What is Rh factor ?

(Turn Over)

- (c) Describe the alternative extrinsic pathway of human blood coagulation.
- (d) What is cardiac cycle? 4+2+6+3
2. (a) Draw a clean architecture of visual pathway.
- (b) Describe visual phototransduction with reference to the involvement of photoreceptors.
- (c) Discuss the pathophysiology of Parkinson's disease briefly. 4+7+4

Subgroup—A(b)

3. (a) What do you mean by Non-specific enzyme inhibitors?
- (b) Describe different types of specific enzyme inhibition.
- (c) State the endocrinal regulation of blood sugar. 2+7+6
4. (a) What are ketone bodies?
- (b) How ketone bodies are formed?
- (c) Describe β -oxidation of fatty acids of any chain length. 2+5+8

Group—B

Answer any *five* questions, taking at least *two* from each of the following subgroups.

Subgroup—B(a)

5. (a) State the absorption of glucose in GI tract.
 (b) Write the role of cholecystokinin in digestion. 5+3
6. (a) State the function of Leydig cells and Sertoli cells.
 (b) How does milk production take place in lactating mother? (2+2)+4
7. (a) State the role of lung surfactant in the regulation of breathing.
 (b) What are biogenic amines and what are their specific functions? 4+(2+2)
8. Describe the muscle contraction with reference to sliding filament theory and role of Ca^{2+} binding protein. 8

Subgroup—B(b)

9. (a) How active transport across cell membrane regulates the ionic balance ?
- (b) What is pinocytosis ? 6+2
10. (a) State how vitamin E in association with vitamin C and selenium regulate oxidative stress.
- (b) What is the impact of pyridoxin deficiency in human ? 6+2
11. (a) What is ribozyme? What is the composition of eukaryotic rRNA according to its size ?
- (b) State the basic principle of DNA replication process. (2+2)+4
12. (a) Define entropy and enthalpy ?
- (b) What is Tyndall effect ?
- (c) Differentiate osmosis and diffusion. (2+2)+2+2

Group--C

Answer any *five* questions, taking at least *two* questions from each of the following subgroups.

Subgroup--C(a)

13. Classify different types of diabetes with its salient features. 4
14. 'Breathing is an active process' — justify. 4
15. (a) Differentiate osteoclast and osteoblast.
(b) Write the name of an autoimmune disease of muscle. 3+1
16. Write the name of the hormones secreted from posterior pituitary and state their functions briefly. 4

Subgroup--C(b)

17. (a) What is the difference between protein and peptide?
(b) What is apoenzyme? 2+2
18. Describe briefly bicarbonate buffering system. 4

19. Discuss Ornithine cycle briefly. 4
20. Discuss the function of vitamin D with relation to Ca^{2+} absorption. 4
-