

Time allowed: 3 Hours

Max. Marks: 45

NOTE: Attempt five questions in all, including Question No. 1 (Section-A) which is compulsory and selecting one question each from Section B -E.

x-x-x

Section-A

1. Answer the following-

- (i) Is vitamin C a pro-oxidant or antioxidant? Explain.
- (ii) Define respiratory quotient. What is its value for different macronutrients.
- (iii) Comment on the biochemical function of folic acid.
- (iv) Differentiate between action of insulin and glucagon.
- (v) What is specific dynamic action?
- (vi) Briefly describe the role of cytochrome P450 in xenobiotic metabolism. (6x1.5=9)

Section-B

2. Describe in detail the sources, structure & biochemical function of- (a) Vitamin D
(b) Vitamin C. (4.5x2=9)
3. (a) Write a short note on the biochemical function of vitamin A and its deficiency diseases.
(b) Give an account of the structure, sources, biochemical function and deficiency disease of Niacin. (5+4=9)

Section-C

4. Write a short note on the following- (a) Basal metabolic rate (b) Essential nutrients (4.5x2=9)
5. (a) What is obesity? How do you define it? What are its consequences on the health of an individual? How do you prevent/treat it? (6)
(b) Write a short note on Kwashiorkor. (3)

Section-D

6. (a) Write a short note on the effect of metabolic induction on xenobiotic toxicity. Give examples to explain your answer. (6)
(b) Describe in detail the physico-chemical properties of toxic chemicals. (3)
7. Write a short note on the following- (a) Phase I reactions (b) Biochemical basis of organophosphate toxicity (4.5x2=9)

P.T.O.

(2)

Section-E

8. (a) What are mineralocorticoids? Give examples and describe their mode of action.
(b) Describe in detail the hormones involved in regulation of calcium. (4.5x2=9)
9. Write a short note on the following- (a) Hypothalamic hormones (b) Structure, function & mechanism of action of thyroid hormones (4.5x2=9)

X-X-X

C4KNOWLEDGE SEEKERS