

Duration: 2^{1/2} Hour.

Max Marks: 60

N.B: 1. All question carry equal marks.

2. Figures to the right indicate full marks.

3. Use of non-programmable calculator is allowed.

Q.1 A. Attempt any TWO of the following: (08)

- i.** Explain the principle and method of estimation of blood Glucose.
- ii.** What is body fluid? Write a note on composition of blood.
- iii.** Give functions of RBC.
- iv.** Explain physiological significance of vitamin A and vitamin K.

B. Attempt any ONE of the following: (04)

- i.** Name the water soluble vitamins. Give the nutritional significance any two water soluble vitamins.
- ii.** Explain physiological significance of Ca.

Q.2 A. Attempt any TWO of the following: (08)

- i.** What are the functions of antibodies.
- ii.** Write a note on principle and mechanism of radioimmunoassay.
- iii.** What are carbohydrates? Give any one method for estimation of carbohydrate.
- iv.** Explain any one method for estimation of enzymes.

B. Attempt any ONE of the following: (04)

- i.** Explain the principle of ELISA. Give any three application of it.
- ii.** Describe the analytical method for estimation of proteins.

Q.3 A. Attempt any TWO of the following: (08)

- i.** Define fuel value. How it is estimated?
- ii.** Write note on food additives and give its classification.
- iii.** Write a note on veterinary drug residue in food.
- iv.** Write a note on Dioxins.

B. Attempt any ONE of the following: (04)

- i.** Write a note on emulsifier.
- ii.** Explain the polycyclic aromatic hydrocarbon formed during food processing.

- Q.4 A.** Attempt **any TWO** of the following: **(08)**
- i.** What is food packaging? Give the objective of food packaging.
 - ii.** Write a note on processing of cheese.
 - iii.** Write a note on bacteriological quality of milk.
 - iv.** In the determination of iodine value of oil, 0.8 g of oil required 30.7 cm³ of 0.11 N Na₂S₂O₃. A blank titration using the same Na₂S₂O₃ gave a value of 36.8 cm³. Calculate the iodine value of oil sample. (Atomic weight of iodine =127).

- B** Attempt **any ONE** of the following: **(04)**
- i.** What are fats? How will you determine acid value of fats?
 - ii.** What are essential oil in clove? How will you isolate essential oil in clove?

- Q.5** Attempt **any FOUR** of the following **(12)**
- a.** Distinguish between serum and plasma.
 - b.** Give physiological significance of Vitamin D.
 - c.** Explain Innate immunity with suitable example.
 - d.** Define the term Antibody and Antigen.
 - e.** Give the role of colouring agent as food additives.
 - f.** Explain sorbic acid as chemical preservative.
 - g.** Write a note on flexible packaging material.
 - h.** Write a note on SAP value of oil.
