

[Time: 2½ Hours]

[Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. All questions are **compulsory**. Choice is internal
 2. Figures to the right indicate full marks. All questions carry equal marks.
 3. From Q. 1 to Q. 4 attempt only one question out of i and ii.
 4. From Q.5 attempt any one question out of a & b, c & d, e & f, and g & h
 5. Draw diagrams and flow charts wherever necessary

- Q.1 A. Attempt any one out of two. 02
- i) Define Hypertonic solution
 - ii) Give distribution of daily water output.
- B. Attempt any ONE out of two of the following. 04
- i) Explain regulation of Water and Electrolytes by rennin – angiotensin system
 - ii) Give sources, functions and deficiency manifestations of Phosphorus
- C. Attempt any ONE out of two of the following 06
- i) Give sources, absorption, transport, functions and deficiency manifestations of Iron
 - ii) Describe excretion of Chloride and give its functions
- Q.2 A. Attempt any one out of two. 2
- i) Define Henry's Law related to pO₂
 - ii) Explain unstable hemoglobin
- B. Attempt any one out of two. 4
- i) With enzyme defect write note on Variegate Porphyria
 - ii) Write a note on respiratory acidosis
- C. Attempt any one out of two. 6
- i) Describe Hb with synthetic variation in globin chain (with α & β Thalassemia)
 - ii) Explain the compensatory mechanism in maintenance of acid – base balance
- Q.3 A. Attempt any one out of two. 02
- i) Enlist the liver function test used to detect Cholestasis
 - ii) Enlist any four proteins synthesized by liver.
- B. Attempt any one out of two. 04
- i) Describe the tests for tubular functions in Renal Function Tests
 - ii) Write a note on Addison's disease
- C. Attempt any one out of two. 06
- i) Describe the role of enzymes as cardiac markers.
 - ii) Describe the role of T4 in hyper and hypothyroidism
- Q.4 A. Attempt any one out of two. 02
- i) Define Pluripotent stem cells
 - ii) Enlist four anti cancer drugs
- 04

- B. Attempt any one out of two. 06
- i) Write a note on tumor markers
 - ii) Explain glycation theory of aging.
- C. Attempt any one out of two.
- i) Explain factors responsible for transformation of normal cell to cancer cell.
 - ii) Explain methods of isolation and propagation of stem cell

- Q.5 Attempt four subquestions (A) OR (B), and (C) OR (D), and (E) OR (F), and (G) OR (H) Turn over
- a) Explain interaction between Vitamin – E and Selenium 03
OR
 - b) Write a note on Wilson’s disease 03
OR
 - c) What is buffer? Explain role of hemoglobin buffer in maintenance of blood pH 03
OR
 - d) Write a note on obstructive jaundice 03
OR
 - e) Write a note on Cushing’s syndrome 03
OR
 - f) Describe genetic defects in relation to hormonal factors. 03
OR
 - g) Explain acquired chromosomal defects 03
OR
 - h) Explain characteristics of benign tumor 03