

(b) Hepatic lobule

(B) Give the mechanism of secretion of hydrochloric acid by parietal cells in the stomach. Give one positive and one negative regulator of HCl secretion.

(C) What is cephalic phase of gastrointestinal system?  
(4 x 2, 5, 2)

6. (a) Explain how?

(a) The female reproductive organs develop in the absence of Y chromosome.

(b) The fertilized egg blocks polyspermy.

(c) Sperm is protected from toxins, drugs and its own immune system.

(b) Explain the significance of Feto-placental maternal axis.  
(4 x 3, 3)

[This question paper contains 4 printed pages.]

**Your Roll No.....**

**Sr. No. of Question Paper : 5502**

**J**

Unique Paper Code : 2492013601

Name of the Paper : Human Physiology

Name of the Course : **B.Sc. (Hons) Biochemistry (NEP)**

Semester : VI

Duration : 2 Hours

Maximum Marks : 60

**Instructions for Candidates**

1. Write your Roll. No. on the top immediately on receipt of this question paper.
2. There are 6 questions.
3. Attempt **any 4** questions.
4. All questions carry equal marks.
5. **Question no. 1 is compulsory.**

1 (a) Explain the following terms:

- (a) ECG
- (b) Anatomic dead space.
- (c) Podocytes
- (d) Vital capacity
- (e) Platelet plug
- (f) Pacemaker potential

(b) Name the following:

- (a) Anticoagulant
- (b) Blood buffer
- (c) Precursor cells of thrombocytes (2×6, 3)

2 (a) Give the control mechanisms maintaining body Homeostasis.

- (b) Detail out the extrinsic pathway of blood clotting.
- (c) Show the changes in the permeability of various ion channels that result in the generation of cardiac muscle action potential.

(d) Exercise increases Cardiac output. Explain

(2, 4, 4, 5)

3. (a) What changes stimulate the central and peripheral chemoreceptors? How do these receptors regulate rate of respiration.

(b) Draw a diagram of the brain labeling the following regions: Parietal lobe of Cerebrum, Somatic sensory cortex area. Cerebellum, pons, and medulla oblongata.

(c) Contrast the somatic and autonomic divisions of the efferent nervous system. Give supportive diagrams. (5, 5, 5)

4. (a) Define GFR.. Give one method of GFR determination. What are different factors affecting GFR?

(b) Explain how kidneys produce hyperosmotic urine via the Countercurrent Multiplier System.

(c) Draw a fully labeled diagram of a sarcomere showing different filaments and bands. (6, 6, 3)

5. (A) Write short notes on the following:

(a) Enterohepatic circulation.