

## PRESENT A NEAT AND LEGIBLE PAPER

## General Instructions:

1. All questions are compulsory.
2. The paper consists of two sections: A and B.
3. Write your answers clearly and legibly.

## Section A: Objective Type Questions (30 marks)

Q.I) Choose the correct answer and write down the option number with the answer: (10)

1. The basic functional unit of the kidney is:  
 A) Nephron    B) Glomerulus    C) Ureter    D) Bladder
2. Which organ is primarily responsible for detoxifying harmful substances in the body?  
 A) Kidney    B) Liver    C) Stomach    D) Pancreas
3. Allergies are primarily caused by:  
 A) Pollen    B) Bacteria    C) Environmental factors    D) All of the above
4. The part of the nervous system that controls voluntary movements is:  
A) Autonomic Nervous System     B) Somatic Nervous System  
C) Central Nervous System    D) Peripheral Nervous System
5. The waste product primarily excreted by the kidneys is:  
 A) Urea    B) Creatinine    C) Ammonia    D) Bilirubin
6. The structure that connects the kidney to the bladder is called:  
A) Urethra     B) Ureter    C) Renal artery    D) Renal vein
7. Anaphylaxis is a severe allergic reaction that can be triggered by:  
A) Food allergens    B) Insect stings     C) Medication    D) All of the above
8. Which type of neuron carries signals away from the central nervous system?  
A) Sensory neuron     B) Motor neuron    C) Interneuron    D) None of the above
9. The process by which excess water is removed from the body is known as:  
 A) Absorption     B) Excretion    C) Respiration    D) Digestion
10. The primary function of the respiratory system in relation to excretion is to remove:  
 A) Carbon dioxide    B) Oxygen    C) Nitrogen waste    D) Water

Q.II Fill in the blanks:

(5 × 1 = 5)

1. The main organ of the excretory system is the \_\_\_\_\_.
2. Allergens can trigger an immune response leading to \_\_\_\_\_.
3. Out of the 3 main parts of the brain, the part responsible for hearing is \_\_\_\_\_.
4. The respiratory centre is located in \_\_\_\_\_ part of the brain.
5. Allergy is an inflated immune response that is demonstrated by \_\_\_\_\_.

**Q.III State true or false. Correct the false statements by changing the underlined words: (5)**

1. The kidney is internally divided into inner cortex and outer medulla F
2. Samantha entered a dark room suddenly after playing outside. The pupil of her eyes dilated. This response is an example of voluntary response T
3. Cosmetics is a type of allergen than cannot enter through the skin in the human body T
4. An artery which carries the blood rich in urea is Coronary artery F
5. Substances that cause allergies are called agents F

**Q.IV Match the following:**

(5)

Column A	Column B
1. Dust allergy	a. filtration
2. Skin	b. Cranium
3. Nephron	c. Asthma
4. Protection of the brain	d. Mixed nerves
5. Spinal nerves	e. Sweat(Salt)

**Q.V Identify the following:**

(5)

1. A funnel-shaped cavity present at the concave side of both the kidneys
2. \_\_\_\_\_ maintains body balance and coordinates muscular activities
3. Pineapple is an example of \_\_\_\_\_ allergy.
4. \_\_\_\_\_ lobe helps in Sensory perception
5. Intake of a diet rich in \_\_\_\_\_ mineral increases the chances of kidney stone formation.

**Section B: Short Answer Questions (30 marks)**

**Q.VI Answer the following in short:**

(4)

1. Distinguish between: ( 1 point each)
  - a. Anaphylaxis and hives
  - b. Micturition and filtration
2. Describe what happens during an allergic reaction.

**Q.VII Give reasons:**

(6)

1. The kidney plays an important role in assisting the decision-making process of the body with regards to the synthesis of blood cell
2. CSF plays a vital role in the CNS
3. Hygiene hypothesis plays a vital role in the body's process of allergic response

**Q.VIII Answer based on parameters:**

(5 × 2 = 10)

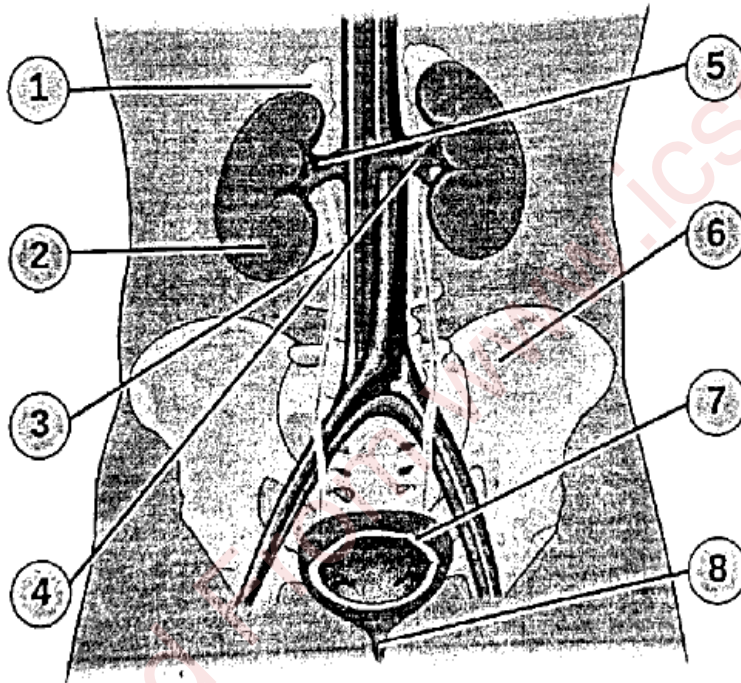
**1. Riya is suffering from a type of skin allergy. She gets a blood test to confirm the type of allergen she is allergic to.**

- i. The concentration of which factor will indicate the presence of an allergen in her body?
- ii. Name the immunoglobulin responsible for generating a response to allergy in her body.
- iii. If Riya is unable to provide a blood sample for this test, which alternate test can be performed to identify the allergy?

2. Name the most common causative agent of UTI? Why is UTI more common in women as compared to men?
3. What are the major forms of nitrogenous wastes excreted by the animals? Explain in short.
4. Distinguish between: allergic rhinitis and utricia based on:
  - a. Symptoms
  - b. Causes
5. At a school picnic, a student suddenly starts showing signs of an allergic reaction after eating a sandwich. He begins to develop hives, troubled breathing, and his face starts swelling.
  - i. Identify the severe allergic reaction this student is suffering from.
  - ii. Name the first line of treatment that can save the life of this student.

Q.IX Answer the questions based on the diagram:

(6)



- a. Label parts 1 to 5 and 7 to 8
- b. State the function of parts 3 and 8
- c. How does part 4 and 5 help in this system
- d. What is the function of part 7
- e. Describe the structure of part 2
- f. What does part 1 do to assist part 2

(4)

Q.X) Fill in the flow chart:

\_\_\_\_\_ A \_\_\_\_\_ > Nephron > \_\_\_\_\_ B \_\_\_\_\_ > Bowman's Capsule  
 > \_\_\_\_\_ C \_\_\_\_\_ > Ureter > \_\_\_\_\_ D \_\_\_\_\_ > Urethra > Urination