

DATE:

DURATION: 2 hrs

SCIENCE**Paper 3 (Biology)**

Answers to this Paper must be written on the paper provided separately.

You will not be allowed to write during the first 15 minutes.

This time is to be spent in reading the Question paper.

The time given is the time allowed for writing the answers.

Attempt all questions from section I and any four questions from section II.

The Intended marks for questions or parts of questions are given in the bracket [].

Section - I (40 marks)

All questions are compulsory.

Question 1**A. name the following:****5**

1. The ground substance present in the chloroplast.
2. The structure formed by the association of uterine and foetal membrane
3. The phenomenon in water bodies due to excessive nutrient run-off from agricultural land.
4. The hormone stimulating ovulation.
5. The photoreceptor cells of the retina that help perceive coloured images.

B. State whether the following statements are true or false. If false, rewrite the correct statements by changing only the first/last word**5**

1. A plant is kept in the dark for 48 hrs. before conducting the photosynthesis experiment such that starch is removed from the experimental plant.
2. Centromere is the organelle of the cell that initiates cell division.
3. The process of attachment of the zygote to the uterine wall is called gestation.
4. Meiosis is the type of cell division that occurs in the body part during wound healing.
5. The tissue responsible for translocation of food in plants/trees is the xylem.

C. Given below are five sets with five terms each. In each set one term is odd. Choose the odd one out of each set and name the category to which the others belong:**5**

1. TAB, MMR, BCG, CFC, DPT
2. Semi-circular canals, Malleus, Utriculus, Cochlea, Sacculus,
3. ADH, GH, TSH, ACTH, FSH

4. Vomiting, Sneezing, Blinking, Typing, Coughing
5. Cortex, Mesophyll, Epidermis, Endodermis.

D. Give technical terms for : **5**

1. Engulfing of bacteria by a white blood cell
2. Formation of ATP in the light reaction
3. Changes between the individuals of the same species
4. The force among water molecules during transpirational pull
5. Fluid present inside the semicircular canals

E. Re-arrange and rewrite the correct logical sequence as per the example given: **5**

- **Example:** cell, organism, organ, tissue, organ system
- **Answer** – cell → tissue → organ → organ system → organism

1. Target gland, releasing hormone, hypothalamus, pituitary, tropic hormone
2. G2 phase, Karyokinesis, S-phase, Cytokinesis, G1 phase.
3. Ruptured follicle, corpus luteum, graffian follicle, primary follicle, ovulation
4. Rete testis, Vas deferens, Seminiferous tubules, Vasa efferentia, Epididymis
5. Fibrinogen, Thrombokinase, Fibrin, Thrombin, Prothrombin

F. Given below in the box are a set of 18 biological terms. Of these 14 can be paired into 7 matching pairs. Of the 7 pairs, one has been done for you as an example. Write out the remaining 6 matching pairs. **6**

Pace maker, Acrosome, Epidermis, Neuron, SA node, Nephron, Penicillin, Endodermis, Sperm, Brain, Antibiotic, Guard cell, Antigen, Kidney tubule, Antiseptic, Vaccine, Testis, Cerebrospinal fluid.

Example- Pace maker- S A Node.

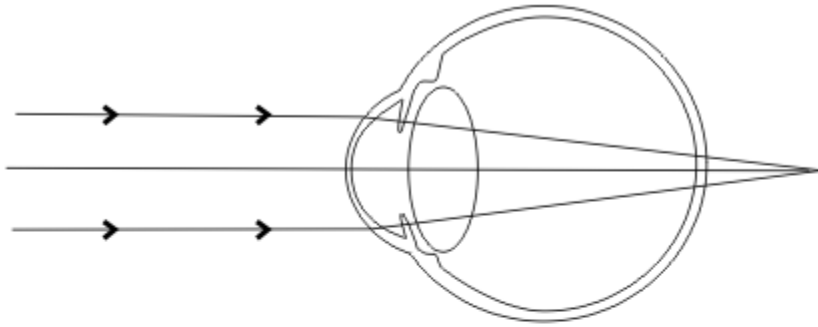
G. Give the exact location and function of **4**

1. Meninges
2. Chordae tendinae
3. Amnion
4. Thylakoids

H. Given below are statements with four choices. Select and rewrite the correct answer to the given statements from the four choices given below each statement. **5**

1.

I. Given below is defect of the eye. Observe and answer the questions that follow. **5**



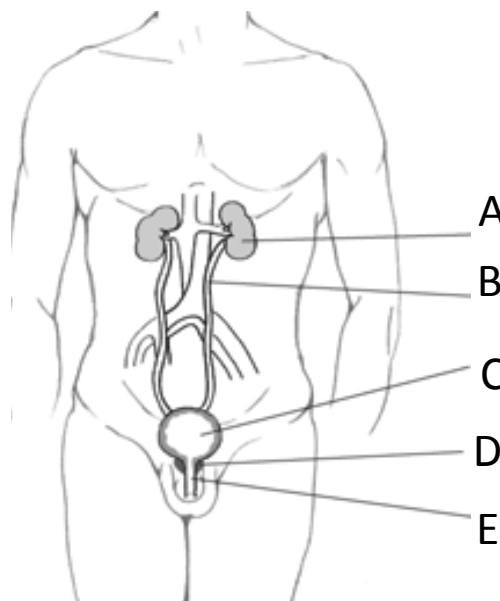
1. Name the defect and the lens used for its corection.
2. Give two causes of this defect.
3. What is the symptom of this defect?
4. Name two defects of the eye that is caused due to old age.
5. Name the parts of the eye through which the light has to pass before it reaches the lens.

SECTION II (40 MARKS)

Attempt any four questions from this Section.

Question 2

- A. Given below is a diagrammatic representation of a Human Urinary System. Study the same and answer the following questions. 5



1. Label the parts A, B, C and E.
2. What is part D and what is its function?
3. Apart from the urinary system, based on the organs seen in the figure mention two other systems.
4. Based on the type of excretory waste produced classify Humans and Birds.

B. Answer the following

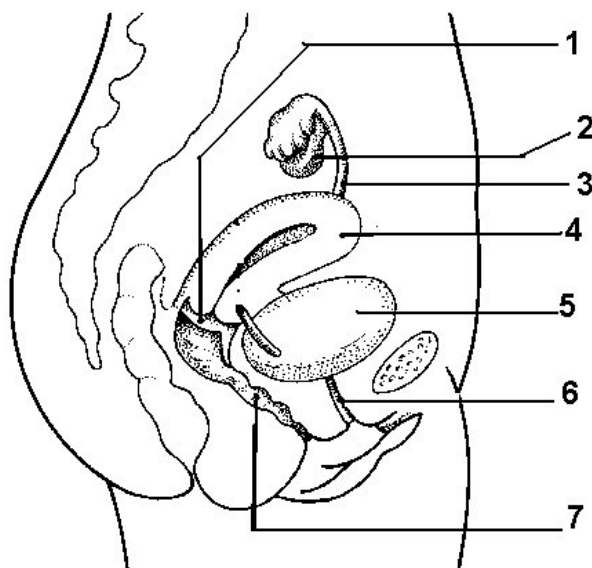
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1. Differentiate between Vaccine and Serum.
2. Mention two major activities of Red cross.
3. What are Antibiotics?
4. What are the effects of air pollution?
5. Mention two ways to control green house gases.

Question 3

A. The figure below shows the organs of a system in humans. Observe the figure and answer the following questions:

5



1. Identify the system.
2. Name the parts 1, 2, 3, 4 and 5
3. Which part is also called as the birth canal? (give the number and the name)
4. What changes happen in part 4 if there is no fertilisation?

B. Answer the following questions.

5

1. Explain the term **Criss-cross inheritance**.
2. If we cross plants having Round Yellow seeds with Wrinkled Green green each pure for its traits what will be
 - i. The phenotype in the F1 generation
 - ii. The phenotypic ratio after selfing in the F2 generation.
3. Given below are three diseases
 - a. Hypertrichosis, b. Colour-blindness, c. Haemophilia
 - i. Identify if these are X-linked or Y- linked.
 - ii. Give the genotype of a males with these diseases.

Question 4

A. Answer the following questions.

[05]

- 1. During a street fight between two individuals, mention the effects of the following organs by the autonomous nervous system, in the table given below: (one has been done for you as an example)**

ORGAN	SYMPATHETIC SYSTEM	PARASYMPATHETIC SYSTEM
★ Lungs	Dilates bronchi and bronchioles	Constricts bronchi and bronchioles
i. Heart		
ii. Pupil of the eye		
iii. Salivary gland		

- 2. Draw the T.S. of spinal cord and label the gray matter, white matter, dorsal horn and ventral horn.**

B.

1. Diabetes mellitus and Diabetes insipidus (Reason/cause)
2. Antiseptic and Disinfectant (Function /use)
3. Lymphocytes and Neutrophils (Structure)
4. Cerebrum and Spinal cord (Arrangement of Cyton and axons of neurons)
5. Renal cortex and Renal medulla (Composition)