

Date: 08/01/19
Class: X

Marks: 80
Time: 2 hrs

*You will not be allowed to write during the first 10 minutes
This time is spent in reading the Question paper.
The time given at the head of this paper is the time allowed for writing the answers
This paper has 7 printed sides.
Answer all questions from section A and any four questions from section B.
The intended marks for the questions or parts of questions are given in brackets []*

SECTION A [40MKS]

Question 1

A) Name the following

[5]

- i) The organ responsible for reflexes below the neck
- ii) Statistical study of human population
- iii) The person regarded as the 'Father of Evolution'
- iv) The enzyme secreted by the acrosome
- v) A vestigial organ in man
- vi) The phenomenon of ageing in plants
- vii) The sensory structure present in the median canal of ear
- viii) The blood vessel carrying oxygenated blood back to the heart
- ix) The type of pollution which causes an increase in the no. of cancers
- x) The unit of heredity in living organisms

B) Choose the correct alternative from the choices given below each statement so as to complete its meaning and rewrite the complete statements

[5]

i) A colour-blind daughter may be born when:

- A. Mother is colour-blind and father is a carrier
- ~~B. Mother is a carrier and father is colour-blind~~
- C. Mother and father both are carriers
- D. Mother is normal but father is colour-blind

ii) The selective agent causing the change in peppered moth was

- A. Humans
- B. Lichens
- C. Birds
- D. Smoke

iii) The longest part of a normal cell cycle is

- A. Prophase

- B. Metaphase
- C. Interphase
- D. Anaphase

- iv) The main cause of thermal pollution is release of
- A. Hot water from the industries
 - B. Hot water from the houses
 - C. Chemical from industries
 - D. Waste water from the houses

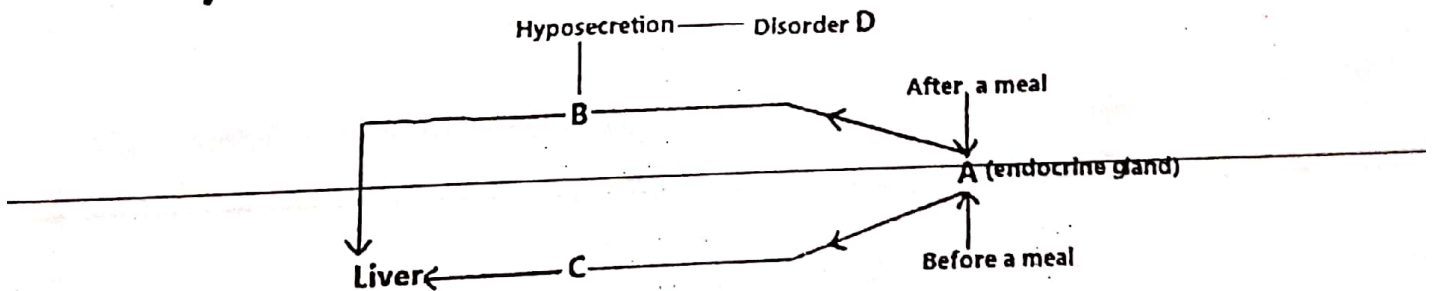
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- v) Cytokinins are predominantly present in
- A. Permanent tissue
 - B. Meristematic tissue
 - C. Endodermis
 - D. Cortical region

C) Correct the following statements by changing the underlined words and rewrite the sentences [5]

- i) Centromere is the organelle that initiates cell division.
- ii) Wooden doors swell up in rainy season due to osmosis.
- iii) Malleus is in direct contact with the oval window.
- iv) Animal hormones are transported by ducts.
- v) Destarching means removing starch from the plant.

D) Observe the diagram given below and answer the questions that follow [5]



- i) Where is gland A located in the body?
- ii) Name the cells of A that produce B and C
- iii) What is the role played by B and C in the body?
- iv) Why is A called an exo-endocrine gland?
- v) Identify disorder D. Give two symptoms of D

E) Define the following

- i) Natality
- ii) Nerve
- iii) Phenotype
- iv) Accommodation
- v) Transpiration

F] Rewrite and complete the following sentences by inserting the correct word/term in the space that is provided. [5]

- i) The conversion of physical energy of light and phosphate ions into chemical energy by the chloroplast is called _____
- ii) The number of chromosomes in a skin cell are _____
- iii) _____ is the process that gives rise to ova
- iv) The process by which molecules distribute themselves evenly within the space they occupy is termed _____
- v) Guttation occurs through the _____

G] Give the function of the following [5]

- i) Glomerulus
- ii) Tympanum
- iii) Fallopian tube
- iv) Guard cell
- v) Tricuspid valve

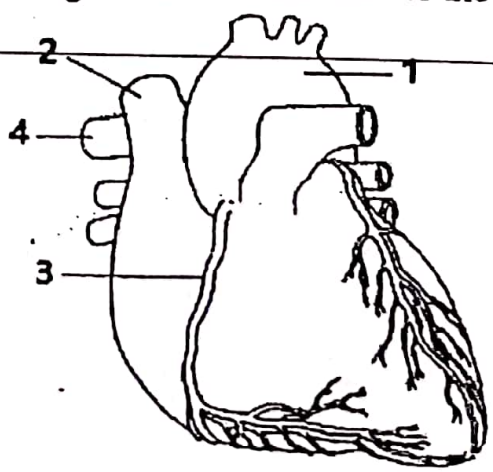
H] There are 5 sets consisting of 4 terms each given below. In each set there is a word which is an odd one. For each of these sets identify the odd one and category of the group [5]

- i) Blinking, knitting without looking, blushing, crying
- ii) Cerebrum, Cerebellum, Thalamus, Hypothalamus
- iii) Haemophilia, Colourblindness, Albinism, Night blindness
- iv) Seminal vesicles, prostate gland, cowpers gland, lachrymal gland
- v) X-rays, carbon dioxide, chlorofluorocarbons, smoke

SECTION B [40MKS]
(Answer any four questions)

Question 2

A] Observe the diagram of the heart given below and answer the questions that follow [5]



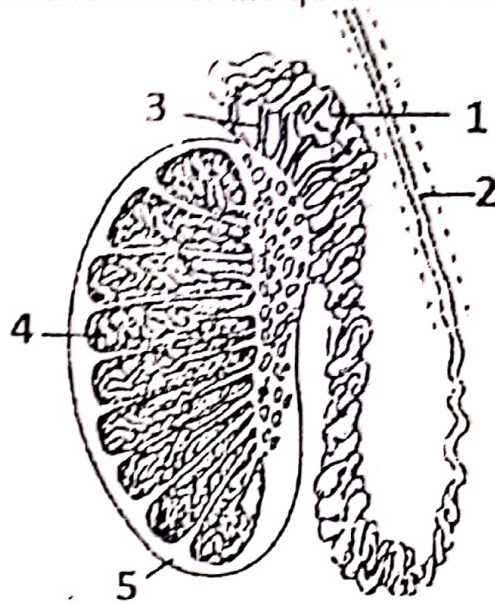
- i) Give the location of the heart
- ii) Label parts 1 and 2

Question 4

A) Study the diagram given below and answer the questions that follow

[5]

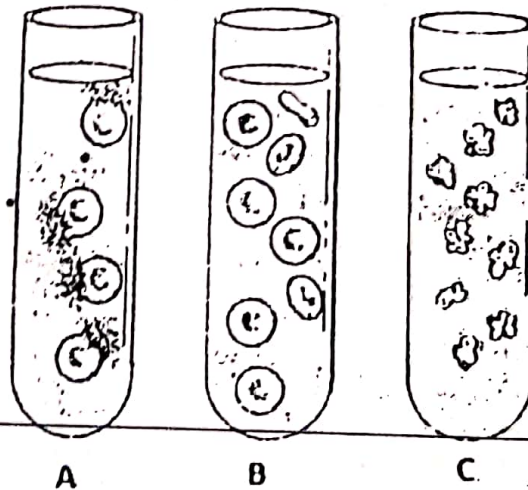
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- i) Label parts 1 to 4
- ii) State the function of the part labeled 1
- iii) What is hernia?
- iv) What tissue is present in between the part labeled 4? What is its function?
- v) Give the pathway of sperms from its site of production to outside the body

B) Few RBC's were placed in different concentrations of salt solution for some time. Observe the diagram shown below and answer the questions that follow

[5]



- i) Identify the type of solutions used in test tubes A, B and C
- ii) Name the process that caused the cells to rupture in A.
- iii) Would the end result in test tube C be the same, if a plant cell was used instead? Justify your answer
- iv) Give the state of a plant cell if it were placed in solution A and draw a well labelled diagram to explain your answer.

- iii) Give the function of the parts labeled 3 and 4
- iv) What happens if part 3 gets an internal clot?
- v) Draw a flowchart to represent the sequence of events occurring during clotting

B) Differentiate between the following on the basis of what is given in brackets [5]

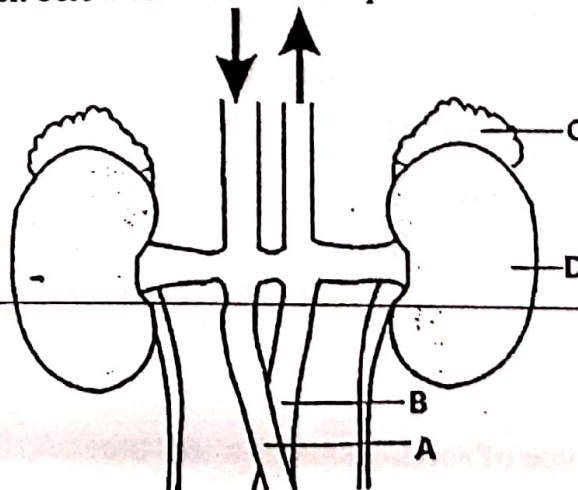
- i) NADP and RuBP (function)
- ii) Static balance and dynamic balance (structure responsible for it)
- iii) Hydrotropism and Thigmotropism (stimulus)
- iv) Cretinism and dwarfism (cause)
- v) Metaphase and Anaphase (position of chromatids)

Question 3

A) Fill in the blanks with appropriate term/ words. Do not copy [5]

Site of synthesis	Hormone produced	Function
1	2	Increases blood pressure
3	Auxin	4
5	Aldosterone	6
7	8	Promotes the falling of leaves
9	Oxytocin	10

B) Observe the diagram given below and answer the questions that follow [5]

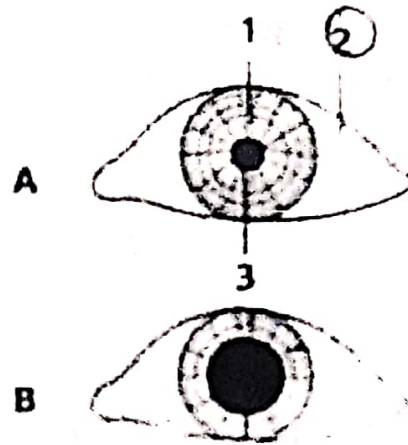


- i) Name the organ systems partly or wholly seen in the above diagram
- ii) Differentiate between A and B based on composition of fluid
- iii) Identify C. Name a hormone that controls its secretion
- iv) Draw L.S. of organ D and label any three parts

Question 5

A] The diagram below shows the view of the human eye in different conditions of light. Observe the diagram and answer the questions that follow

[5]



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- i) Label parts 1, 2 and 3
- ii) Give the light condition in figure A and B
- iii) Explain the role of 1 in the figure A and B
- iv) The visual purple of rods is bleached in which situation A or B? Give a reason for your answer
- v) The change seen in A and B can also be brought about by the nervous system. Name the part of the nervous system that can causes this change

B] Answer briefly and to the point

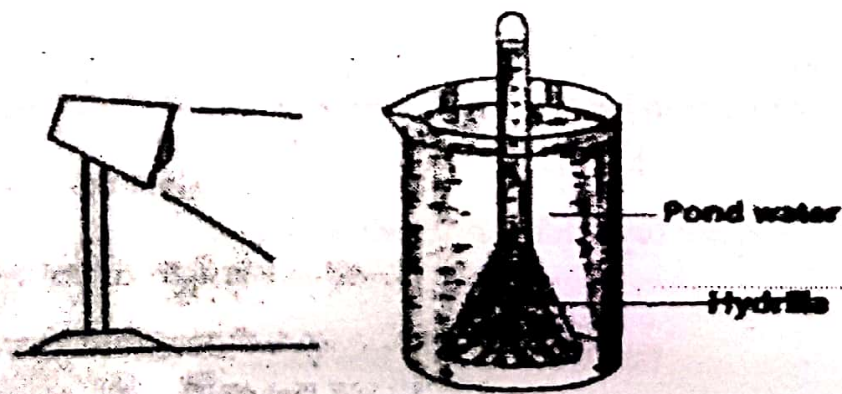
[5]

- i) Explain two consequences of population explosion in India
- ii) Give two features of Neanderthal man
- iii) State two objectives of 'Swachh Bharat Abhiyan'
- iv) Name and explain any two external factors that affect transpiration

Question 6

A] The following diagram demonstrates an experimental set-up for a certain physiological process. Observe the set up and answer the questions that follow

[5]

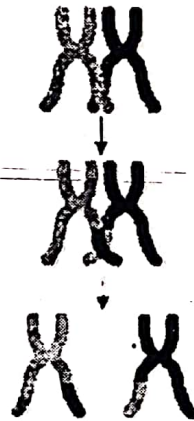


- i) State the aim of the experiment
- ii) What changes will you observe in the above set-up after switching on the light source?
- iii) Explain a way in which you could increase the rate of the phenomenon in the above experiment.

- iv) What change would you observe in the experiment if green light is used? Give a reason for your answer.
- v) Write the equation of the physiological process taking place in the above experiment.

B) Observe the diagram shown below and answer the questions that follow

[5]



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- i) Identify the event taking place in the above diagram and define it
- ii) When and where does it occur?
- iii) Explain its significance
- iv) Draw a diagram of telophase in skin cells and label any three identifying features

Question 7

A) Draw a well-labeled diagram of the shortest route that can be taken by an impulse from receptor to effector

[5]

B) Give scientific reasons for the following

[5]

- i) Twins may or may not be identical
- ii) Throat infections can lead to ear infections
- iii) Red blood cells lack nucleus and mitochondria
- iv) Forests tend to bring rain
- v) If you uproot a plant from the soil, its leaves soon wilt.