

BIOLOGY

Time : 1½ hours

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Score : 40

Instructions

- The first 15 minutes are allowed as “cool off time”. During this time, read the questions carefully and comprehend the questions well.
- Answer any one choice from question numbers 9,14,15 where choices are given.

SCORE

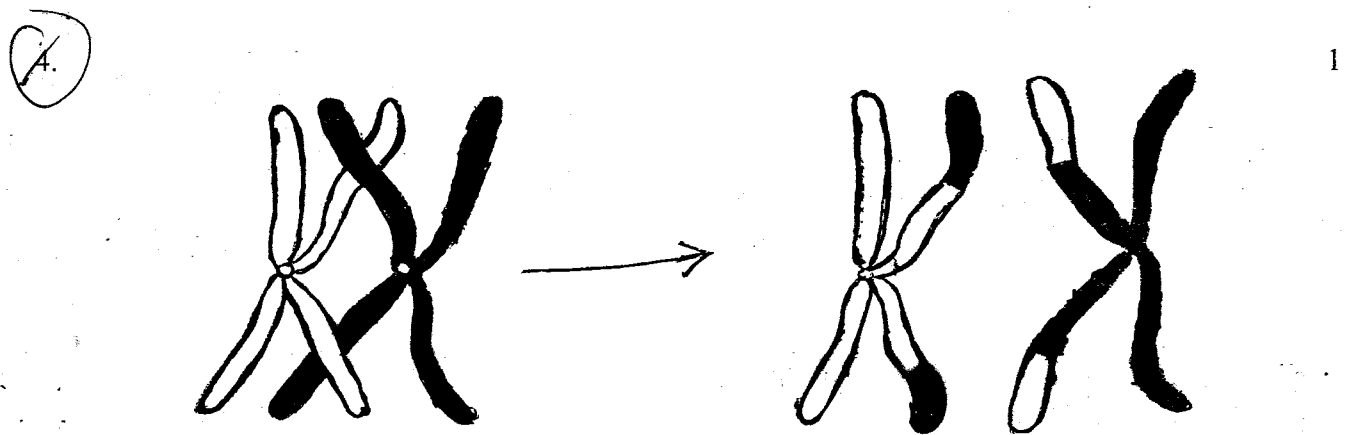
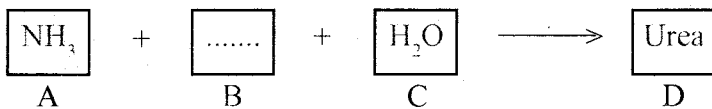
✓ Find out word pair relation and fill up. 2

- (a) Potassium—Enables the opening and closing of stomata.
 Magnesium—Essential for synthesis of *chlorophyll*
- (b) Carbon dioxide is collected and expelled from the body along with water vapour—Lungs
 The waste management plant that maintains homeostasis by detoxifying the toxins that reach the blood—..... *liver*

2 Find out the odd one and comment on the common feature of others. 3

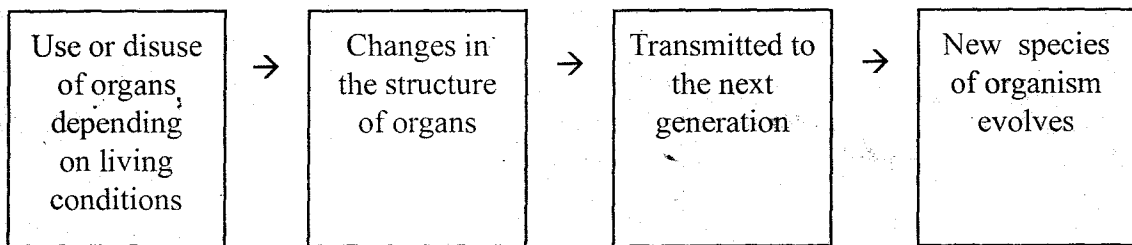
- (a) Dendron, Axon, Ampulla, Dendrite, Axonite.
- (b) Cataract, Blind spot, Night blindness, Presbyopia, Glaucoma.
- (c) Seeing beautiful cinema, Thinking, Hearing melodious song, Sudden withdrawal of legs while stepping on fire accidentally, Sensing the taste of sweets.

3. Complete the illustration. 1



Observe the diagram. Identify the process which occur in Chromosomes during meiosis.

5. Draw a vertical line by a piece of chalk in between when ants moving in row through a definite track. What will happen? Give reason. 1
6. Usually middle aged men holds the news paper far away from the eye to read it clearly. Identify the visual disorder seen in them. 1
7. The hypothesis which explain how do the evolution occur in living beings is illustrated below: 2



- (a) Write the name of scientist who proposed this hypothesis.
- (b) This hypothesis was not fully accepted. Give reason.
8. Whichever be the type of germs infected, the initial symptom appear in human body will be the fever. Give reason. 2
9. A man who is living in a healthy and hygienic environment, taking bath twice in every day by using soap. This will lead to reduction of his natural immunity to diseases. 2
- (a) What is your opinion to this situation?
- (b) Give reason for this.

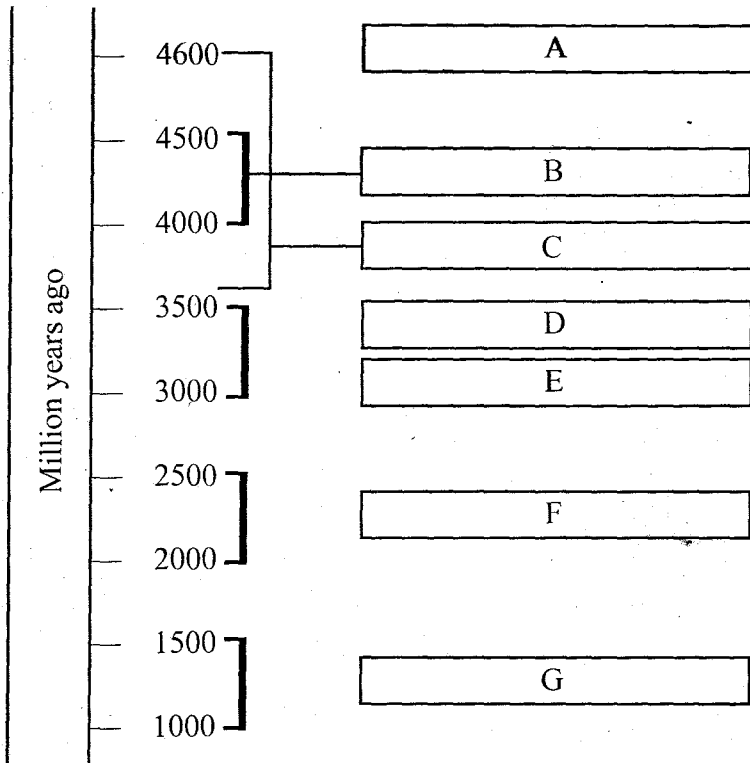
OR

The immunity to disease of a child living in natural environment will be greater than that of a child living in overhygienic environment.

- (a) Do you agree with this statement?
- (b) Give reason for this.

10. Different stages related to the origin of earth, origin and evolution of living being on the earth are given below: 2

- (i) Aerobic micro-organisms capable of photosynthesis.
- (ii) Origin of multicellular organisms./
- (iii) First form of life: /
- (iv) Chemical evolution.
- (v) Anaerobic micro-organisms capable of photosynthesis.
- (vi) Origin of the earth.
- (vii) Origin of ocean.



Arrange these stages correctly according to the geological time scale.

11. Name of various organisms and their excretory organs are given below in groups A and B. Make correct pairs using the terms in group A & B. 2

example: (e)/Plants—(vi)/Stomata

Group A	Group B
(a) Amoeba	(i) Kidney
(b) Earthworm	(ii) Jacobson's organ
(c) Insects	(iii) Contractile vacuole
(d) Fish	(iv) Malpighian tubule
(e) Plants	(v) Nephridia
	(vi) Stomata

12. A pea plant with genetic constitution TtRr (Tall plant which produce red flower) was subjected to self pollination. The genetic constitution of some of the progenies obtained are given below. 2

Write the expressed character of the given progenies based on their genetic constitution.

- | | |
|----------|----------|
| (a) TTRr | (c) ttrr |
| (b) ttRr | (d) Ttrr |

13. List of various physiological activities in human body which are under the control of autonomous nervous system are given below. Group them into actions of sympathetic system (Group A) and parasympathetic system (Group B)

2

- Pupil dialates.
- Urinary bladder contracts.
- Trachea dialates.
- Function of the stomach is stimulated.
- Secretion of saliva increases.
- Glycogen is converted into glucose.
- Peristalsis slows down.
- Rate of heart beat decreases.

14. "Genetic engineering is the branch of Science that transform the living world".

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- What is your opinion on the above statement.
- Give reason to substantiate your opinion.

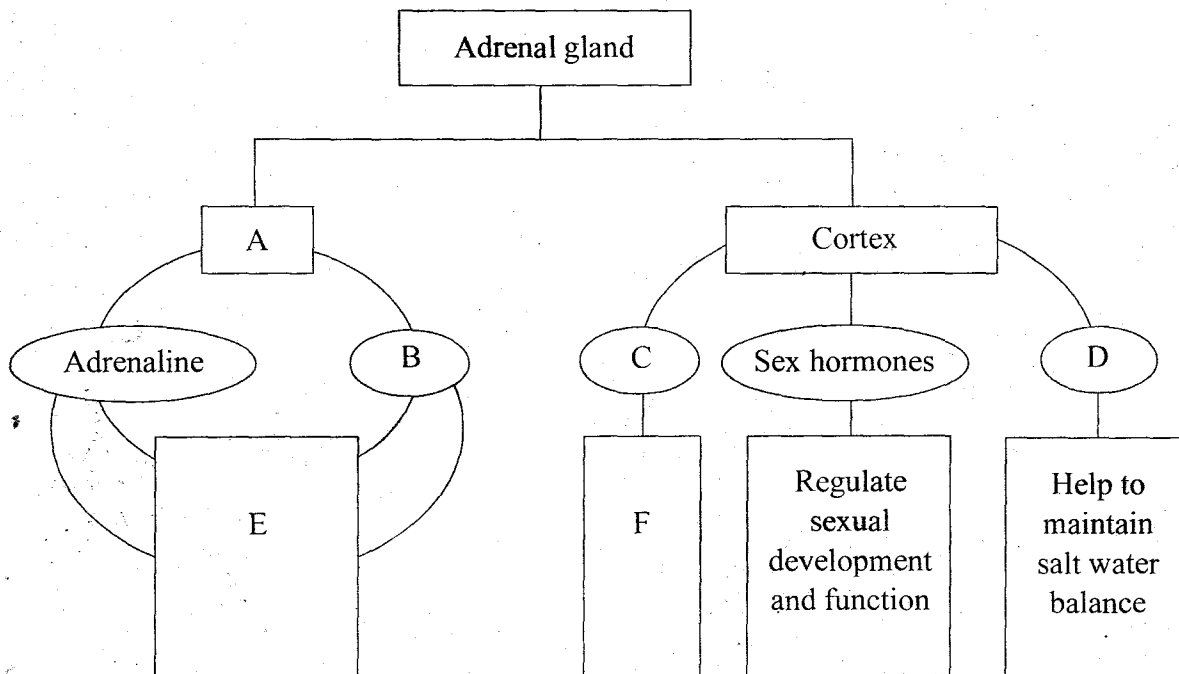
OR

Mr. Rajan decided to divorce his wife by arguing that she is incapable to give birth to a boy child.

- Can you agree with Mr. Rajan?
- Give scientific explanation to this problem with the help of an illustration showing the role of sex chromosomes in determining sex in human being.

15. Observe the illustration and complete the gaps A, B, C, D, E and F appropriately:

3



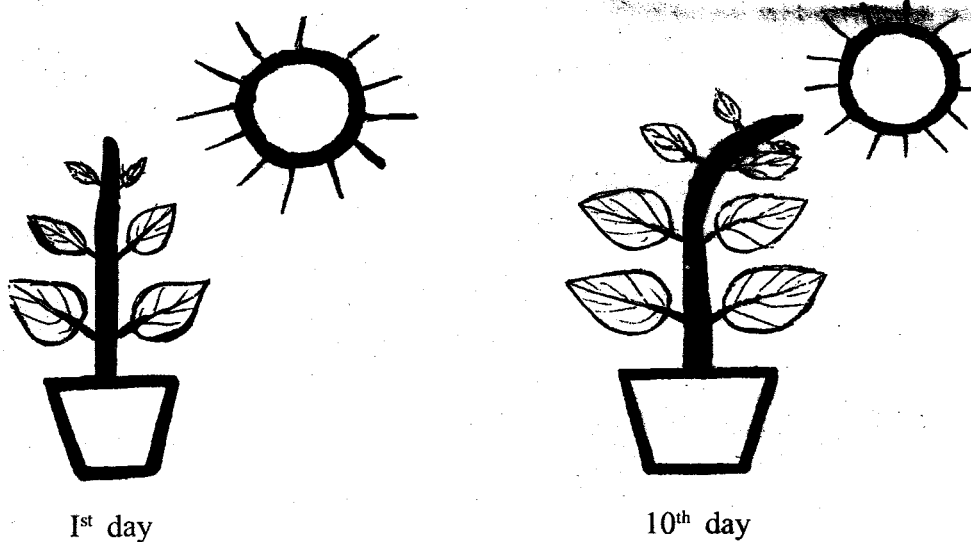
(Contd.)

Observe the table and fill up the blanks (a, b, c, d, e, f) in it.

	Plant Hormones	Uses
Artificial plant hormones	NAA	a. To prevent root
	IBA	b. germination of seed
	c. 2,4-D	Destruction of weeds
	Ethyphon	d. induce flowering
	e. ethylene	Induce ripening of fruits
Natural plant hormones	Cytokinin	f.

16. Observe the illustration.

3

1st day10th day

Observe the deviation in the direction of growth of stem tip:

- Write the name of phenomenon you observed in the picture.
- Give reason for deviation in the direction of growth of stem tip.

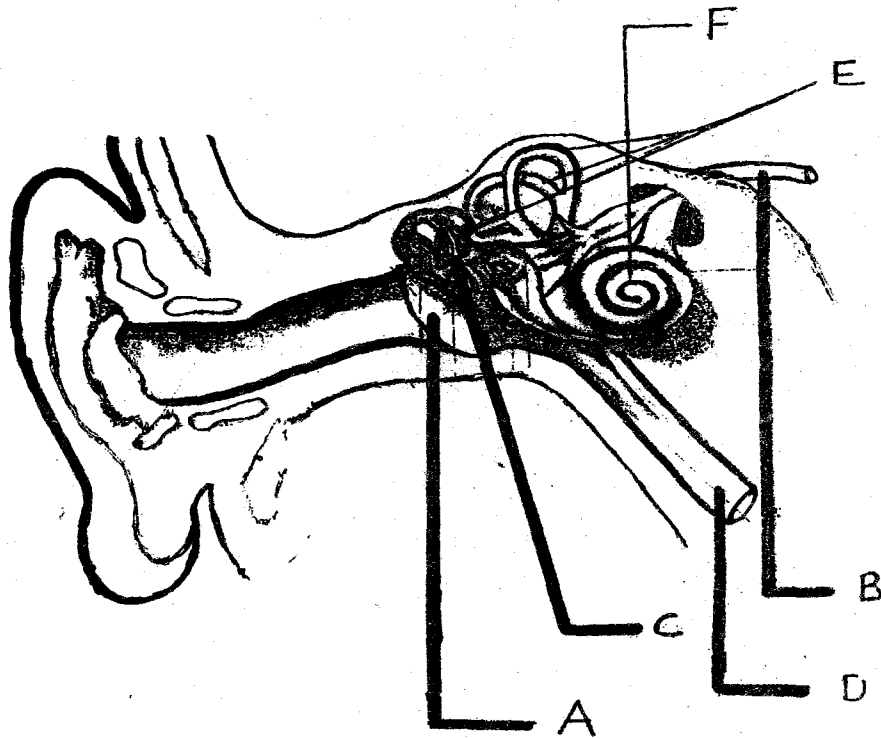
17. "Diseases are caused not only by micro organisms. Many of the diseases are caused by bad habits".

4

- Give two suitable examples for the statement given.
- Substantiate the statement based on the topic habits and diseases.

18. The diagram given below shows the structure of ear:

4



- (a) Redraw the diagram.
- (b) Label the parts A, B, C, D.
- (c) Write down the name and function of E and F.
