

BIOLOGY

Std. X

Time : 1½ hrs
Total score : 40

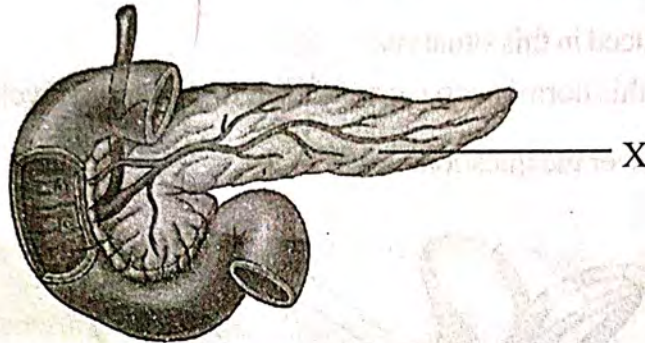
Instructions :

- The first 15 minutes is cool off time. You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Consider score and time while answering.

Answer any 5 questions from Q. No. 1 to 6. Each carries 1 score.

[5x1 = 5]

1. Which gland is indicated as "X" in the figure? (1)



2. Correct mistakes if any in the underlined portion of the given statements. (1)

- In Planaria, the ommatidia helps to detect light.
- In Shark, the receptors of lateral line help to detect the change in the balance of the body.
- In Snakes, the Organ of Corti helps to detect the smell.

3. Choose the correct pair from the following. (1)

- Cerebrum - Maintains equilibrium of the body
- Hypothalamus - Maintains homeostasis
- Cerebellum - Evokes sensations.

4. Destruction of ----- in the brain is the cause for Parkinsons disease. (1)

- Myelin
- Dopamine
- Meninges
- Ganglion

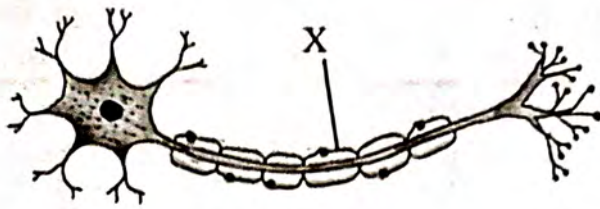
5. Select the statement related to Cataract from the following. (1)

- Defect of cone cells.
- Lens of the eyes become opaque.
- Deficiency of vitamin A.
- Infection of the conjunctiva.

6. Find out the odd one and write the common feature of others. (1)

Insulin, Cortisol, Glucagon, Thymosin

7. Observe the figure and answer the questions.



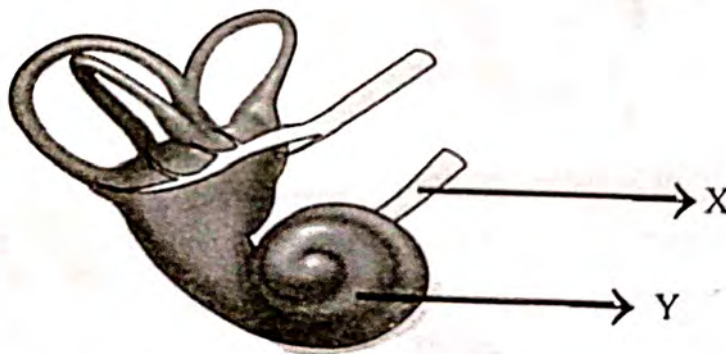
- (a) Identify and name the part labelled as 'X'. (1)
- (b) How does the presence of the part 'X' useful to the neuron? (1)

8. Examine the condition given below and answer the questions.

Blood calcium is less than normal.

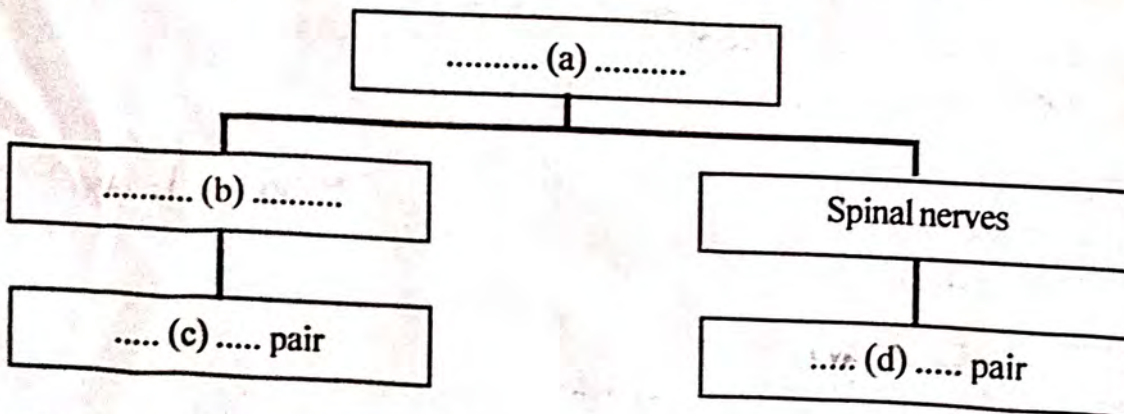
- a) Which hormone is produced in this situation? (1)
- b) Write any one action of this hormone to increase the blood calcium level. (1)

9. Observe the figure and answer the questions.



- a) Identify and name the parts 'X' and 'Y'. (1)
- b) Write the function of 'X'. (1)

10. Complete the illustration related to a part of the nervous system suitably. (2)



11. A child's doubt is given below. Analyse it and write your conclusion. (2)

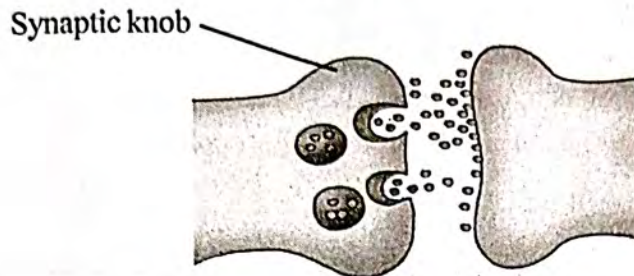
"If sympathetic system helps to overcome the emergency situations, then what is the use of epinephrine and norepinephrine in this?"

12. Rearrange the statements given in the box related to sense the smell suitably.

(2)

- Aromatic particles dissolve in the mucus and stimulate the olfactory receptors.
- Aromatic particles enter the nostrils through the inhaled air.
- Impulses reach the brain and experience smell.
- Generate impulses.

13. Observe the illustration and answer the questions.



- a) What does this illustration indicate? (1)
- b) What is the role of this part to transmit the impulse from one neuron to adjacent neuron? (1)

Answer any 5 questions from Q. No. 14 to 20. Each carries 3 score.

[5x3 = 15]

14. Analyse the statements and give reason.

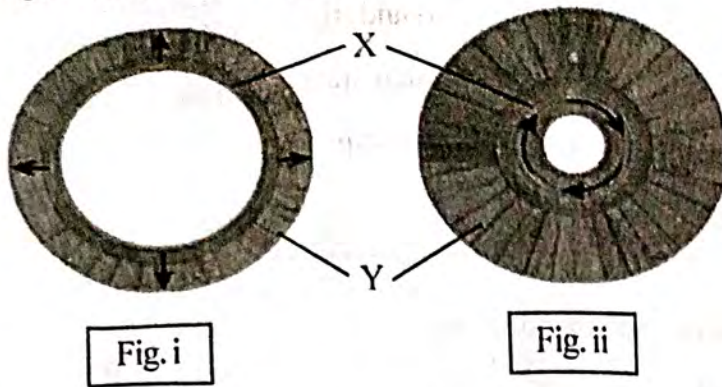
- a) Colour blind persons are not selected for jobs like that of a driver, pilot etc.
- b) Tears have the ability to destroy germs.
- c) No vision at blind spot.

15. Rearrange columns B and C according to column A.

(3)

A. Disorder	B. Cause	C. Symptoms
Myxoedema	Continuous and excessive production of thyroxine	Thyroid gland enlarges
Hyperthyroidism	Prolonged deficiency of thyroxine in adults	Hinders physical and mental development
Goitre	Decrease in production of thyroxine during fetal or early infancy	High metabolic rate, Weight loss.
	The production of thyroxine is blocked in the absence of Iodine	Low metabolic rate, sluggishness

16. Observe the figure indicating the regulation of the size of the pupil and answer the given questions.



- (a) Name the muscles labelled as X and Y. (1)
 (b) Which figure shows the change in the pupil in dim light? (1)
 (c) How do these muscles cause change in the pupil in dim light? (1)

17. Complete the table based on the hints. (3)

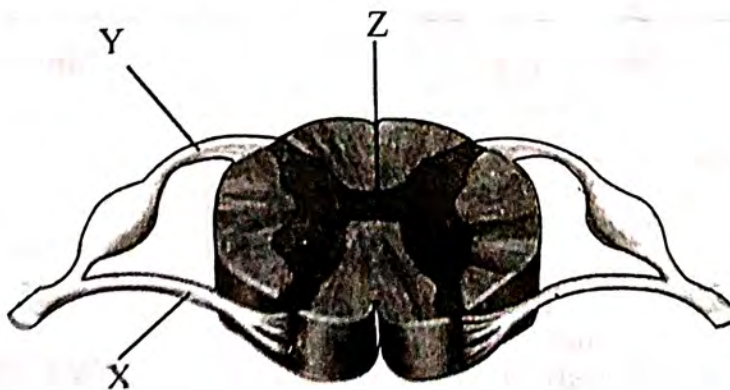
Organ (A) (B)
Liver (i) (ii)
Urinary bladder (iii) (iv)

Hints: A, B – Parts of autonomous nervous system.
 (i), (ii), (iii), (iv) - Function of the parts of autonomous nervous system on the organs.

18. Hints related to an endocrine gland are given below. Analyse it and answer the questions.

- Located at the centre of the brain.
 - Produces hormone that helps to maintain the rhythm of daily activities.
- (a) Name the gland. (1)
 (b) How does the hormone mentioned here influence sleep and waking up? (1)
 (c) Write another function of this hormone. (1)

19. Observe the illustration showing the section of spinal cord and answer the questions.



- a) What do X and Y indicate? (1)
 b) How do the impulses transmitted through these differ? (1)
 c) Write the functions of the fluid seen in the part Z? (1)

20. Hints related to the fluids in the eye are given below. Analyse them and answer the questions.

X.- The water like fluid.

Y.- The jelly like fluid.

- a) Name the fluids X and Y. (1)
- b) Write the function of each fluid. (2)

Answer any 2 questions from Q. No. 21 to 23. Each carries 4 score.

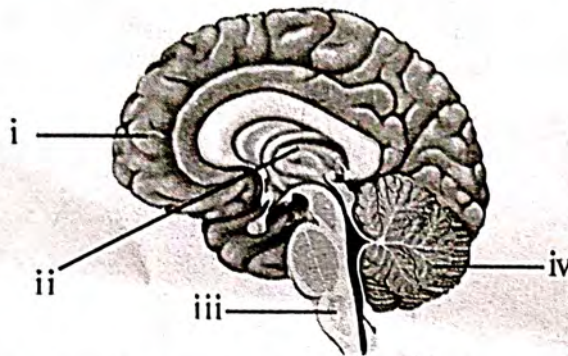
[2x4 = 8]

21. Analyse the statement and answer the questions.

“Actions of the hormone produced by the beta cells of Iselets of Langerhans maintain blood glucose levels without increasing.”

- a) Which hormone is mentioned here? (1)
- b) What happens to the production of this hormone when blood glucose level decreases? (1)
- c) How does this hormone regulate blood glucose level? (2)

22. Observe the figure of Brain and answer the questions: (No need to draw the figure)



- a) Identify and name the parts labelled as (i), (ii), (iii) and (iv). (2)
- b) Write the function of the parts (ii) and (iii). (2)

23. Redraw the diagram and answer the questions.



- a) Name and label the following parts. (1)
- i. Part that receives the sound waves. (1)
- ii. Part where small hairs and wax are present. (1)
- b) How do the pressure on either side of the part that vibrates in resonance with sound waves is maintained? (1)

For redrawing – (1)