(Pages : 7)

S 1527

Sl. No.

SSLC EXAMINATION, MARCH - 2020

BIOLOGY

(English)

Time : **1½** Hours

Total Score : **40**

Instructions :

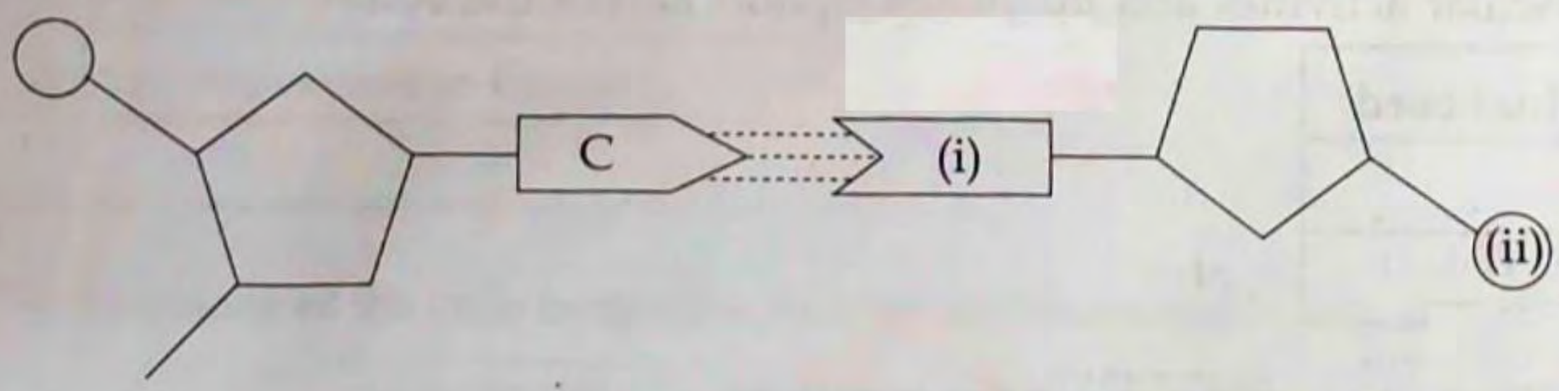
- The first **15** minutes is cool-off time.
- You may use the time to read the questions and plan your answers.
- Answer only on the basis of instructions and questions given.
- Consider score and time while answering.

Score

Answer **any five** questions from Q.No. **1** to **6**. Each carries **one** score. **5x1=5**

1. The process that leads to the formation of impulses in photoreceptors is : **1**
   (a) The dissociation of visual pigments in the presence of light
   (b) Formation of Vitamin A in the presence of light
   (c) The transmission of impulses to cerebrum through the optic nerve
   (d) The reunion of retinal and opsin

2. What are indicated by (i) and (ii) in the illustration of DNA molecule given below ? **1**



3. Analyse the given symptoms and identify the disease. **1**
   - Low metabolic rate
   - Hypertension
   - Inflammation in tissues

4. Based on the given model, make a suitable pair from the following box : **1**

Model

Charles Darwin - The theory of natural selection.

Hugo deVries, Lamarck,
Chemical evolution theory, Panspermia,
Mutation theory, Robert Malthus

5. In plants, which is the chemical substance that prevents the germs, that have crossed the cell wall from entering the cell membrane ? **1**

P.T.O.

6. Select the correct pair from the following options :

Junk genes	The functional genes take part in the synthesis of protein
Interferons	The genetic scissors used to cut genes
Genome	The complete genetic material present in an organism
Endorphins	The proteins used for the treatment of growth disorders

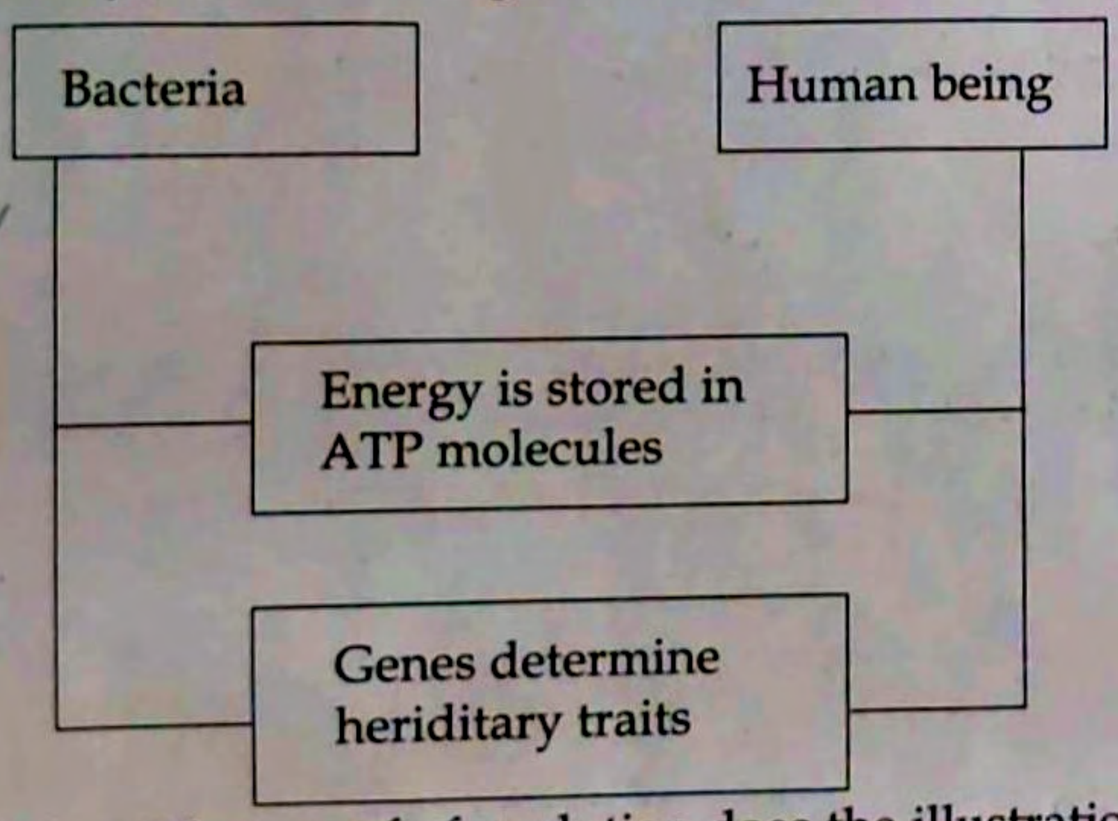
Answer **any six** questions from Q.No. **7** to **13**. Each carries **two** score. 6×2=12

7. Suitably arrange the information under the given headings. 2

- Evokes sensations.
- Co-ordinates the repeated movements during walking and running.
- Impulses from the different parts of the body are transmitted to and fro the brain.
- Co-ordinates muscular activities and maintains equilibrium of the body.

Brain	Spinal cord
•	•
•	•

8. Analyse the following illustration and answer the questions :



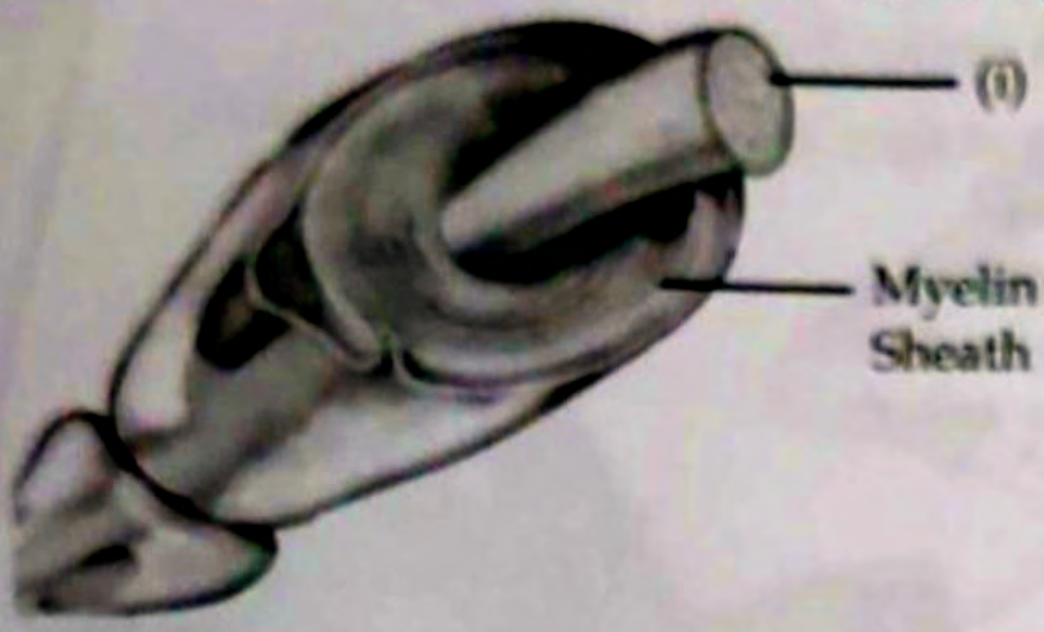
(a) What proof of evolution does the illustration give ? 1

(b) Does the study of homologous organs give similar proof ? How ? 1

Score

9. Analyse the following statements related to certain diseases and give the reasons for each.
   (a) In hepatitis, dark yellow colour appears in white portion of the eyes and the nails. 1
   (b) In diphtheria, an ash coloured thick coating forms in the throat. 1

10. Observe the picture and answer the following questions :

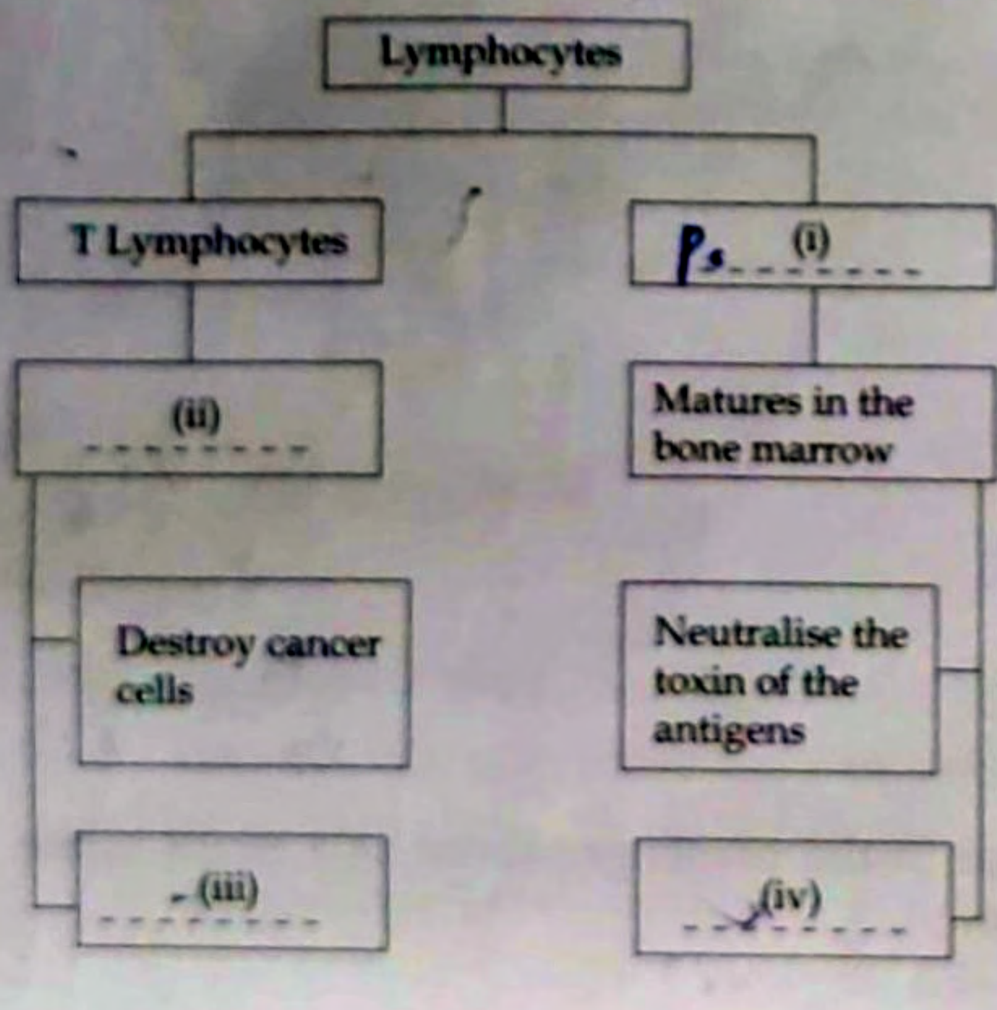


   (a) Name the part indicated as (i). 1
   (b) How does myelin sheath form ? 1

11. Analyse the table related to human chromosomes and arrange the column B in accordance with column A. 2

A	B
Sex Chromosomes	22 + X
Somatic chromosomes	44 + XY
The chromosomes in sperms	22 pairs
The chromosomes in Ovum	X, Y
	22 + X, 22 + Y

12. The functions of the cells in specific defense are illustrated below. Identify (i), (ii), (iii) and (iv). 2



Score

13. Analyse the following statement and answer the questions :
"Though haemophilia is not completely curable, temporary relief can bring in."
(a) How temporary relief can bring in ? 1
(b) Why complete cure is not possible ? 1

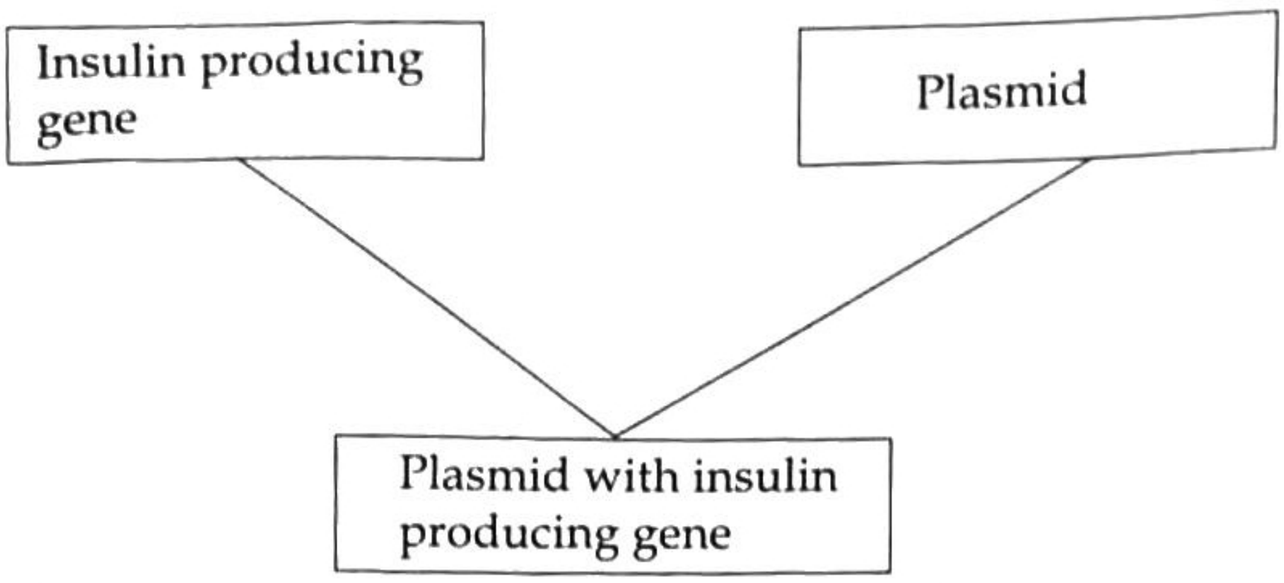
5x3=15

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

14. Observe the given steps related to the experience of taste and arrange them properly. 3

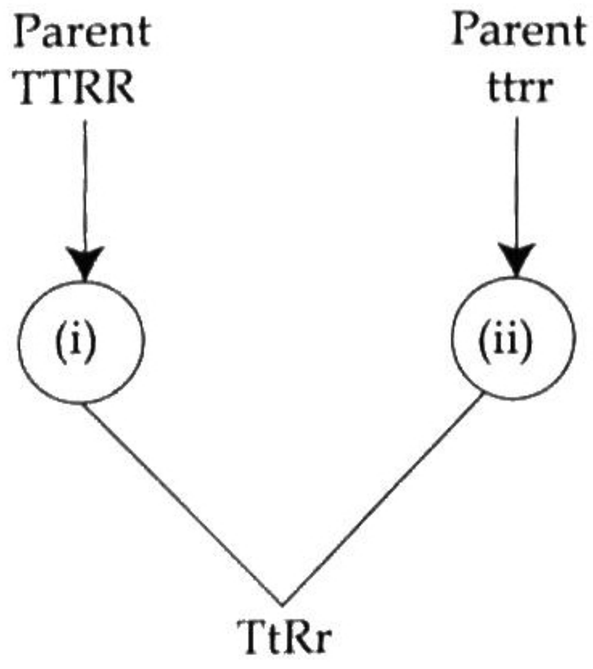
- Impulses reach the brain through the nerves.
- The taste detecting chemoreceptors are stimulated.
- The substances reach the taste buds through saliva.
- Substances responsible for taste dissolves in saliva.
- Forms the experience of taste.
- Impulses form in the chemical receptors.

15. Analyse the part of an illustration related to genetic engineering and answer the following questions :



(a) Add further steps and complete the illustration. 1
(b) Mention any other advantages of genetic engineering. 2

16. The hybridization process of a tall round seeded plant with a dwarf wrinkled seeded plant is illustrated below :

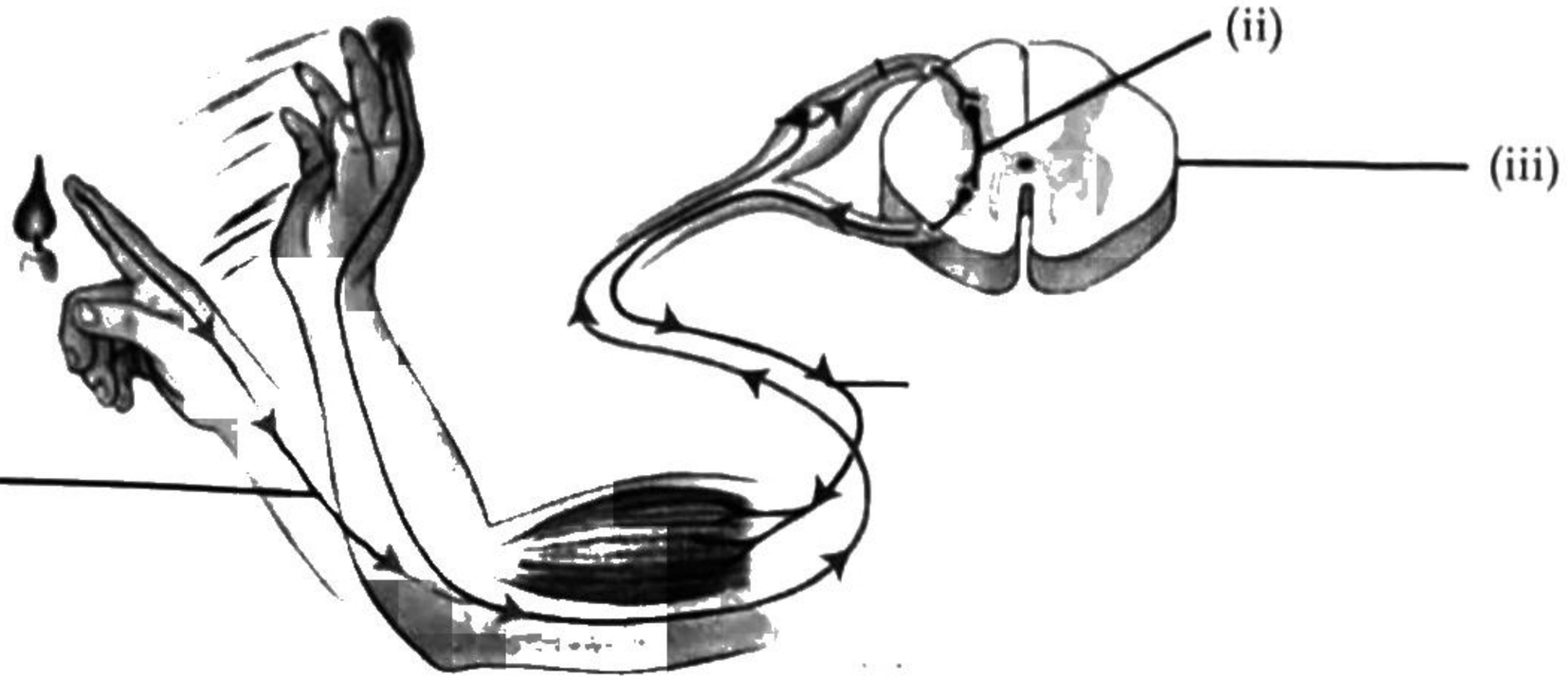


(a) Identify and fill (i) and (ii). 1
(b) What may be the characters that will appear in the plants produced as a result of the self pollination of the first generation ? 2

Score

17. Write a short note which explains the mode of transmission and precautions of rat fever to include in a pamphlet preparing for an awareness programme. **3**

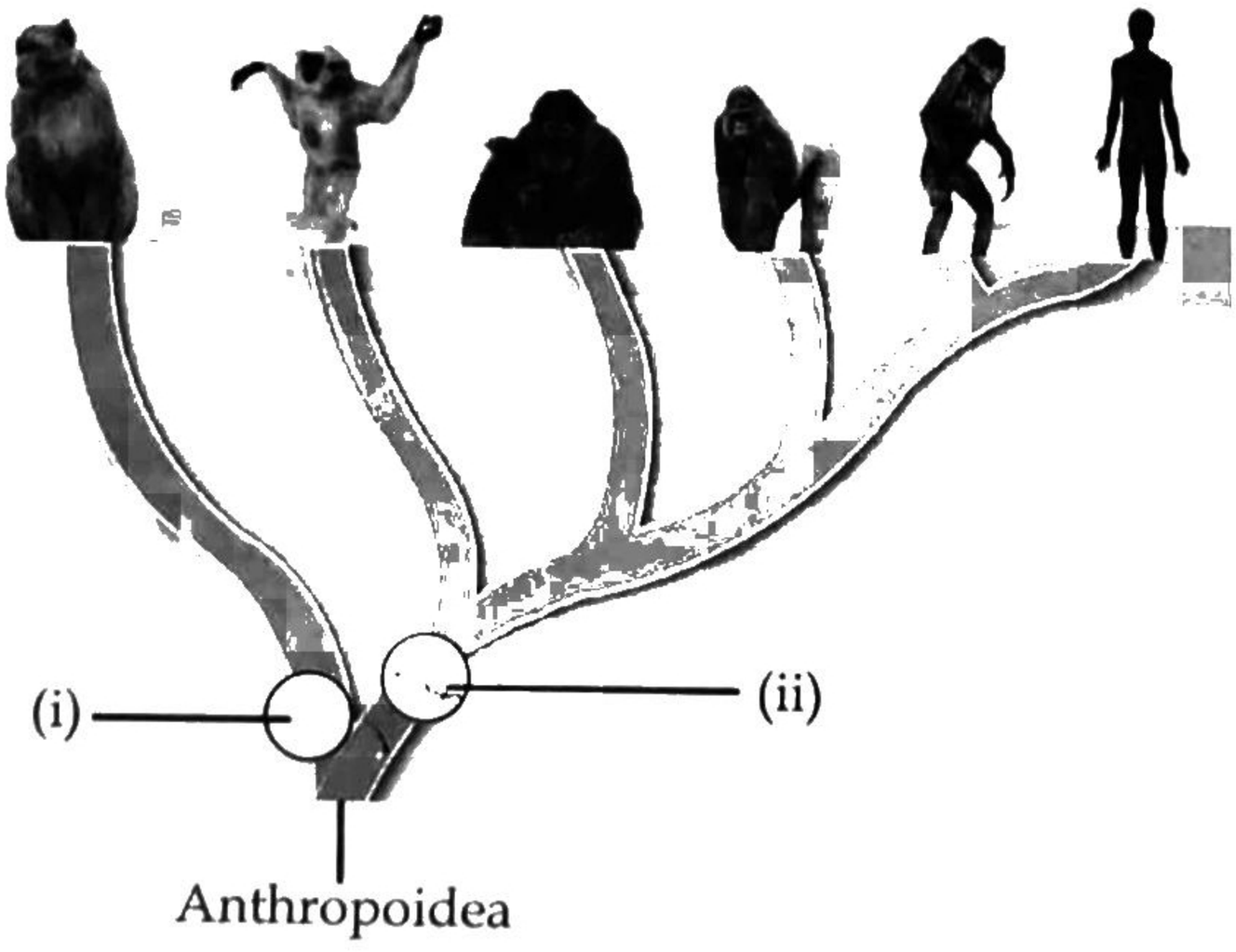
18. Analyse the illustration and answer the following questions :



(a) Write the names of (i) and (ii). **1**

(b) Are all accidental responses controlled by (iii) ? Explain with an example. **2**

19. An illustration related to human evolution is given. Analyse it and answer the following questions :



(a) Write the names of categories (i) and (ii). **1**

(b) Mention the two important characteristics of organisms belong to (ii). **1**

(c) How does the comparative study of haemoglobin helped to identify the evolutionary relationship between man and chimpanzee ? **1**

Score 3

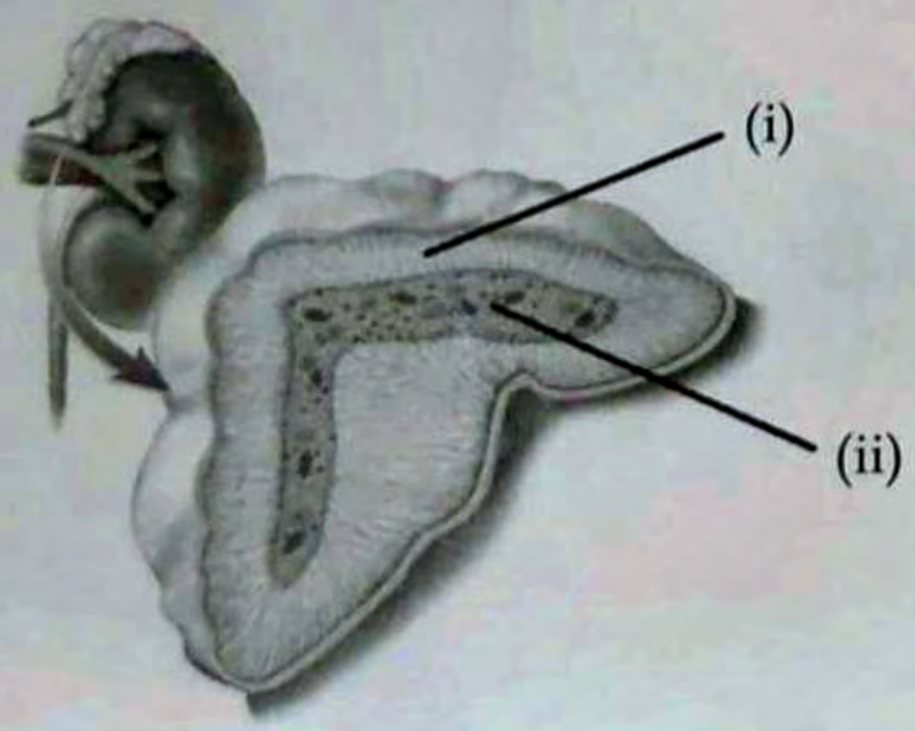
20. Select suitable items from the box and complete the table related to hormone defects.

Gland	Hormone	Defect	Symptom
Pancrease	(i) _____	Diabetes	(ii) _____
Hypothalamus	Vasopressin	(iii) _____	(iv) _____
Pituitary	(v) _____	(vi) _____	Growth of the bones on the face and jaw

- Somatotropin
- Diabetes insipidus
- Acromegaly
- Presence of glucose in urine
- Frequent urination
- Insulin
- Hindrance in proper physical and mental development

Answer **any two** questions from Q.No. **21** to **23**. Each carries **4** score. 2x4=8

21. Identify the gland indicated in the picture and answer the following questions :



(a) Name the hormone produced by the part indicated as (i) which slows down the action of defense cells. 1

(b) Name the two hormones produced by the part indicated as (ii). Give their functions. 2

(c) Write two important functions of aldosterone. 1

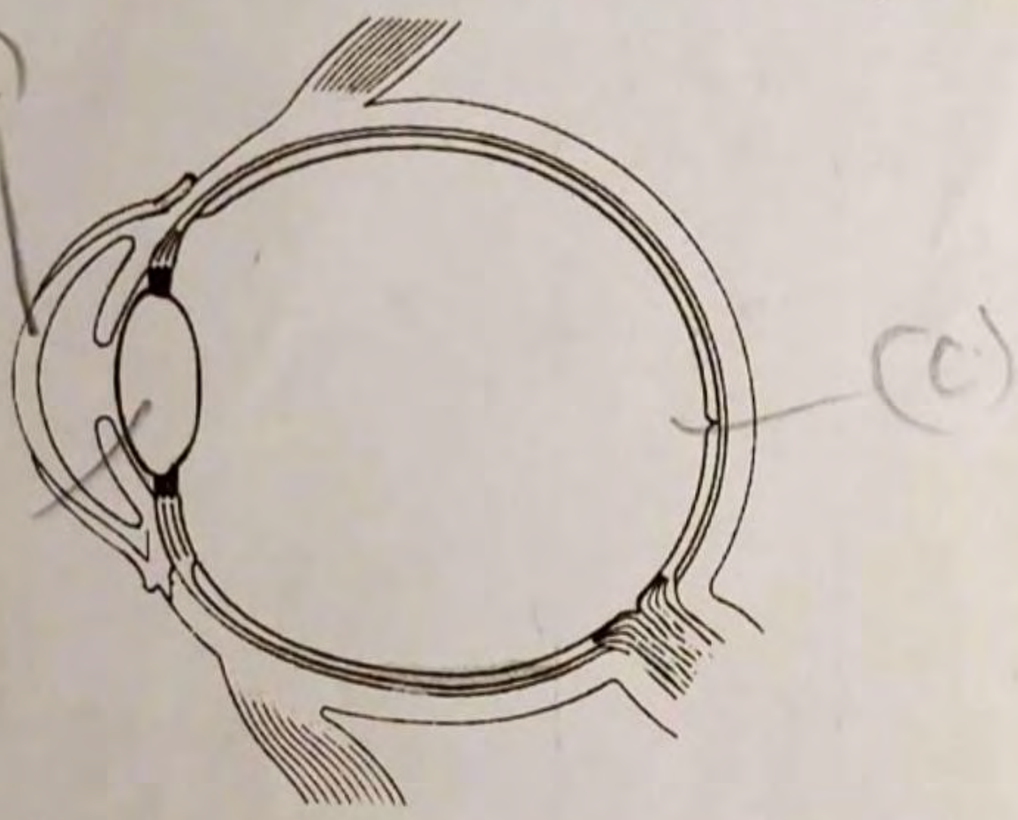
Score

22. Explain how body will react to the situations described below :

(a) A foreign antigen reaches one's blood. 2

(b) The components of vaccines enter the body. 2

23. Redraw the picture given below. Identify the name indicated and label the parts. 4



(a) The part refracts light rays into the eye.

(b) The part that adjusts its size as the intensity of light varies.

(c) The part of Retina where plenty of photoreceptors are seen.

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