

**SAMPLE QUESTION PAPER - I**  
**THIRUVANANTHAPURAM EDUCATIONAL DISTRICT**  
**BIOLOGY**  
**STANDARD X**

Time: 1½ Hours



Maximum Score: 40

**PART I**

**A. Answer any four questions from 1 to 6. (1 score each). (4x1=4)**

1. Identify the word pair relation and fill in the blanks.

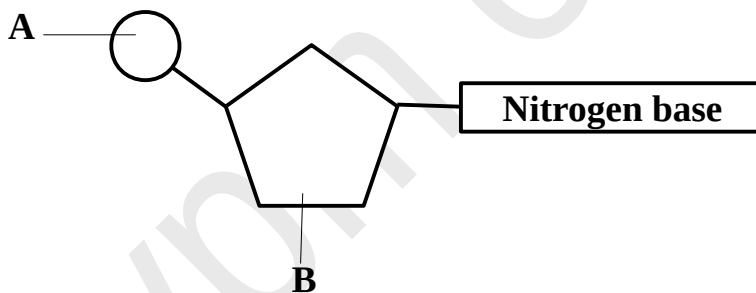
Female silk worm moth : Bombykol  
Civet cat : .....

2. Eye  $\xrightarrow{\text{X}}$  Brain

What does 'X' indicate?

a. Sensory nerve    b. Motor nerve    c. Interneuron    d. Mixed nerve.

3. Observe the given figure and identify the parts labelled as 'A' and 'B'.



4. Name the plant hormone that controls ripening of leaves and fruits.

5. Which among the following hormone pairs are related to the regulation of calcium level in blood?

a. Parathormone- Oxytocin                      b. Vasopressin- Aldosterone  
c. Calcitonin- Cortisol                              d. Parathormone- Calcitonin

6. Find out the fungal disease among the following.

Malaria, Ringworm, Filariasis, Rat fever.

**B. Answer all the questions from 7 to 9. (1 score each). (3x1=3)**

7. Find the odd one and write the common feature of others.

ENT, ECG, C.T Scanner, EEG.

8. Some artificial plant hormones and their functions are given below. Choose the correct pair.

- a. Auxins - for harvesting fruits at the same time.
- b. Gibberellins - to prevent the dropping of premature fruits.
- c. Ethyphon - to increase the production of latex.
- d. Abscisic acid - weedicide.

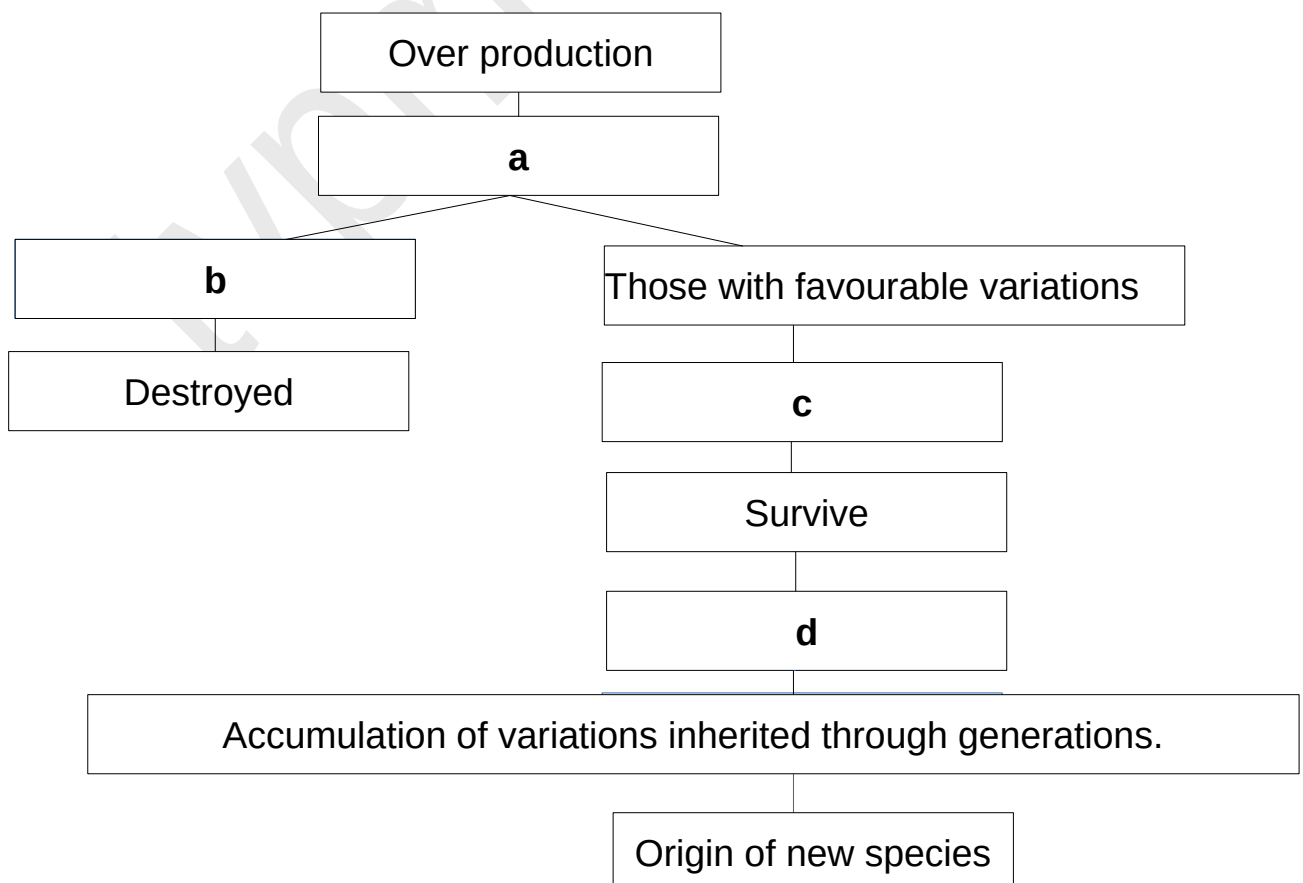
9. Select the correct statement related to DNA profiling.

- a. The technology by which the position of a gene responsible for a particular trait in DNA can be located.
- b. The technology of testing the arrangement of nucleotides in DNA.
- c. The technology by which desirable changes are made in genetic make up.
- d. The technology of replacing disease causing genes by normal functional genes.

**PART II (1x2=2)**

**A. Answer the following question. (2 score)**

10. Complete the illustration related to Darwin's theory of Natural Selection..



**B. Answer any one question from 11 and 12. (2 score ). (1x2=2)**

11. Some organisms and their receptors are given in the box . Make suitable pairs.

Planaria, Shark, Jacobsons'organ, Housefly,Lateral line, Eye spot, Ommatidia, Snake.
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12. Analyse the given statement and answer the following.

“There are certain limitations in producing insulin using bacteria”.

- i. Write the limitation in utilising bacteria for insulin production.
- ii. Name one application of genetic engineering that helps to overcome this limitation.

### PART III

**A. Answer any three questions from 13 to 16. (3 score each). (3x3=9)**

13. Various steps related to gene action properly are given below. Arrange them suitably.

- i. mRNA reaches outside the nucleus.
- ii. tRNA brings different kinds of amino acids to ribosome.
- iii. mRNA reaches ribosome.
- iv. Based on the information in mRNA, amino acids are added.
- v. Protein is synthesised.
- vi. mRNA forms from DNA.

14. Complete the table.

Defense mechanisms in plants	Role
Cuticle	(a)
(b)	Protects the inner cells from direct contact of pathogens.
Callose	(c)

15. Analyse the statement and answer the questions.



**This microbe disrupts the immunity power of the body.**

- a. Which is the microbe mentioned in the slide?
- b. Name the disease caused by this microbe.
- b. How does this affect the immunity of the body?
- c. Write any two ways by which one get infected with this microbe.

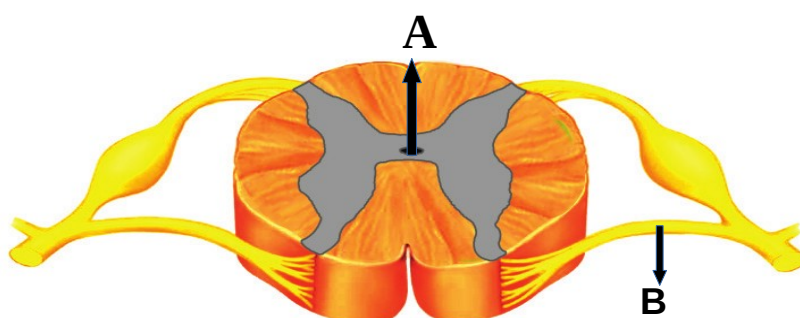
16. Observe the table, re-arrange column B and C in accordance with column A.

A	B	C
Gigantism	The growth of the bones on the face, jaws and fingers.	Excessive production of somatotropin after the growth phase
Dwarfism	Excessive growth of the body.	Excessive production of somatotropin during the growth phase.
Acromegaly	Stunted growth	Production of somatotropin decreases during the growth phase.

**B. Answer the following question. (3 score).**

**(1x3=3)**

17. Observe the cross section of the spinal cord and answer the following questions.



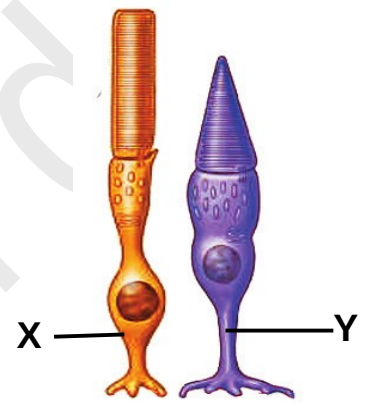
- i. Identify the parts labelled as 'A' and 'B'.
- ii. Name the fluid seen in the part labelled as 'A' .
- iii. Write the peculiarity of impulses that are transmitted through the part labelled as 'B'.

#### PART IV

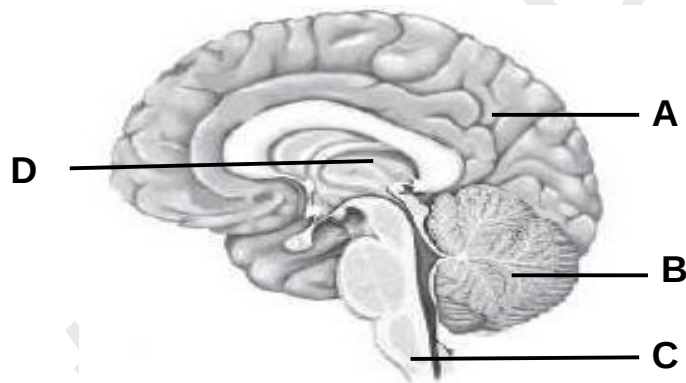
**A. Answer any two questions from 18 and 20. (4 score each). (2x4=8)**

18. Observe the figure given below and answer the questions.

- a. Identify the photoreceptors indicated as 'X' and 'Y'.
- b. Name the visual pigments present in 'X' and 'Y'.
- c. Write the function of 'X'.
- d. Name the eye disorder related to 'Y'.

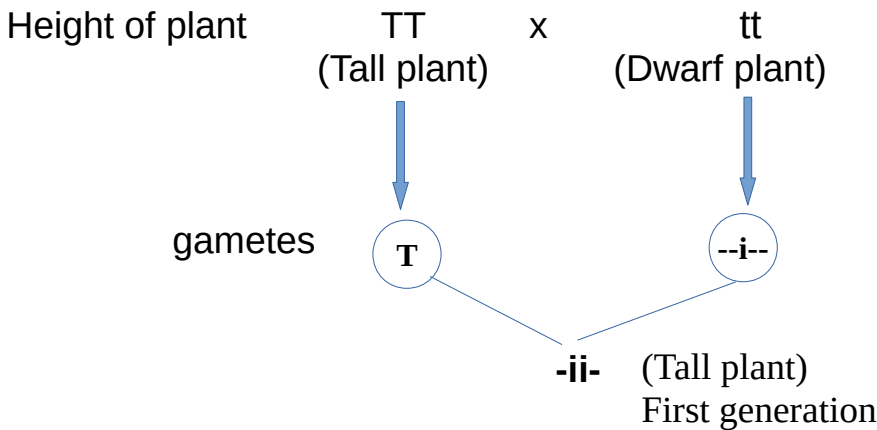


19. Observe the figure and answer the following.



- a. Identify the parts labelled as A, B, C and D.
- b. Write any two functions under the control of the part indicated as 'A' .
- c. Write any two protective measures of brain.

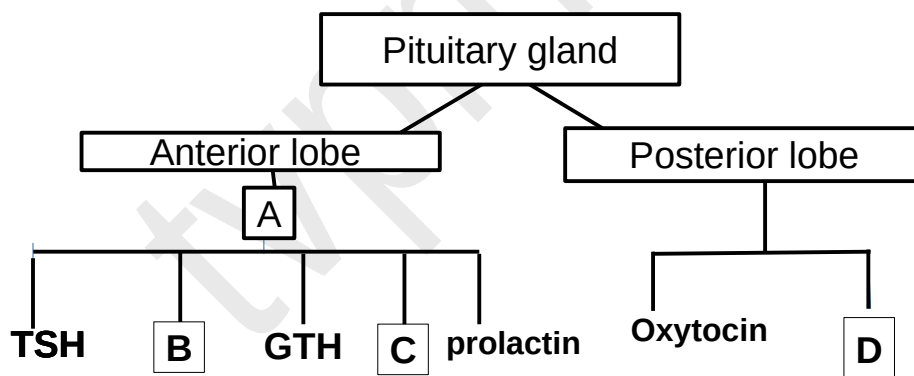
20. Observe the illustration and write down the answers.



- Complete the illustration.
- Identify the dominant and the recessive trait in the first generation.
- How does the tall parental plant and the first generation plant differ in their alleles?
- Write the ratio of the dominant and the recessive traits in the second generation.

**B. Answer any one question from 21 to 22. (4 score each). (1x4=4)**

21. Analyse the illustration and answer the following.



- Identify the hormones indicated as A, B, C and D.
- Write the function of the hormone indicated as D.
- How hypothalamus regulates the action of pituitary gland?

22. Observe the poster of a genetic disease and answer the following.

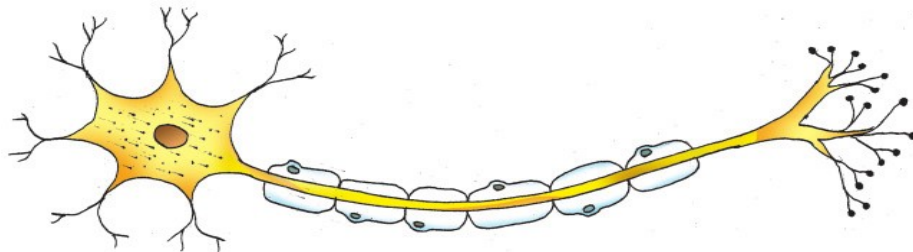


- i. Why this disease is known as a genetic disease?
- ii. Why blood loss occurs in haemophilia patients through minor wounds?
- iii. Is there any cure for haemophilia?

#### PART IV

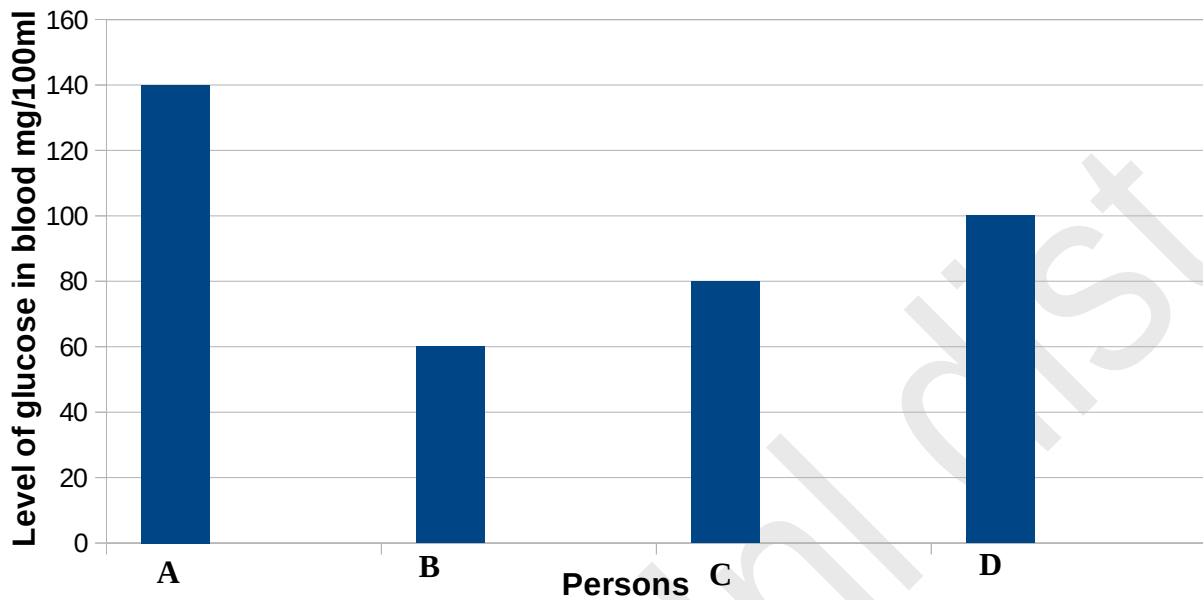
**A. Answer any one question from 23 to 24. (5 score each). (1x5=5)**

23. Redraw the diagram and label the following parts.



- a) The part which secretes neurotransmitter.
- b) Part that receives impulses from adjacent neuron.
- c) Carries impulses from the cell body to outside.
- d) Carries impulses to the synaptic knob.

24. Examine the graph indicating the blood glucose level of different individuals before breakfast.



- Which individual is diabetic?
  - Name the test used to detect the presence of glucose in urine.
  - Write the reason and symptoms of diabetes.
  - Write two actions of insulin to prevent the rise in level of glucose in the blood.
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