

# THIRUVANANTHAPURAM EDUCATIONAL DISTRICT

## SSLC MODEL QUESTION PAPER 2020 -2021

### BIOLOGY

Time: 1.30 hrs.

Max marks: 40

#### Instructions:

- First 20 minutes is given as cool off time.
- Total questions are given for 80 marks.
- Maximum available score is 40

Questions 1 to 10 carries 1 score each.

#### 1. Identify the word pair relationship and fill in the blanks.

Hypothalamus: Maintains homeostasis.

.....: Controls involuntary actions. (1)

#### 2. Find out the odd one and write the common feature of others?

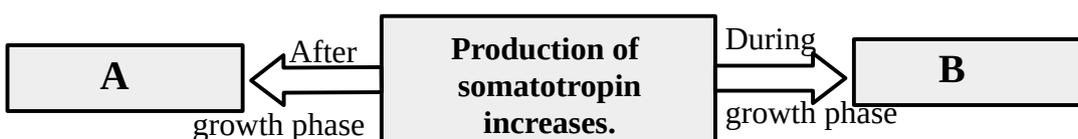
Plasmid, Restriction endonuclease, Pheromones, Ligase. (1)

#### 3. Which among the following is the technology used for testing the arrangement of nucleotides ?

(i) Gene therapy (ii) Gene mapping (iii) Human Genome Project (iv) DNA profiling .

(1)

#### 4 Select suitable words from the box and complete the illustration.



Acromegaly, Cretinism, Dwarfism, Gigantism.

(1)

**5. Pick out the correct answer from those given in brackets.**

Name the most primitive member of the human race.

[Homo habilis, Homo sapiens, Homo erectus, Ardipithecus ramidus] (1)

**6. Select the correct pair from the following.**

- a) Musk deer: civetone
- b) Civet cat: musk
- c) Female silk worm moth: bombykol (1)

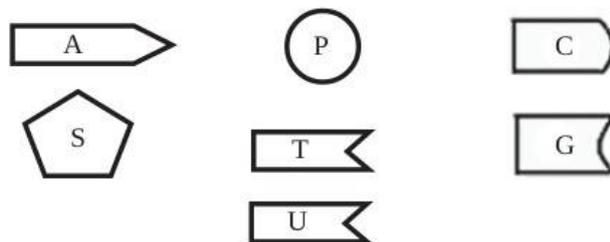
**7. Select the correct statement from the following.**

- a) AIDS is not spread through insects like mosquitoes, houseflies etc.
- b) Tuberculosis is a viral disease.
- c) Complete cure is possible for Haemophilia.
- d) Chemotherapy is the treatment of malaria. (1)

**8. Four statements related to sex determination in humans are given below. Find out the incorrect statement and make it correct.**

- a) The child with XX chromosome is female.
- b) The child with XY chromosome is male.
- c) The possibility for the birth of a male or female child is equal.
- d) The X, Y chromosomes of the mother determine whether the child is male or female. (1)

**9. The components of nucleotides are given below. Illustrate the nucleotide present only in RNA.**



(1)

10. An illustration related to a communicable disease is given below.

Observe the illustration and identify the disease.



(1)

Questions 11 to 22 carries 2 score each.

11. Correct the statements if there is any mistake in the underlined words.

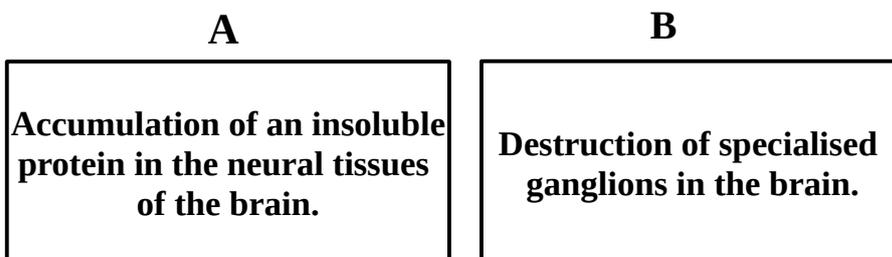
- a) Blind spot is the part where we get the maximum visual clarity.
- b) Iris has the muscles that alter the size of the pupil.
- c) Optic nerve transmits impulses to the visual centre in brain. (1+1)
- d) The transparent anterior part of choroid is known as cornea.

12. The illustration of a nerve based on its function is given below.



- a) Identify the nerve depicted in the illustration. (1)
- b) Which is the nerve that carries impulses to and from B. (1)

13. The causes of diseases related to nervous system in two individuals are given below. Analyse it and answer the questions.



- a) Identify the diseases of individuals A and B. (1/2+1/2)
- b) Write any two symptoms of the disease in individual A (1)

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



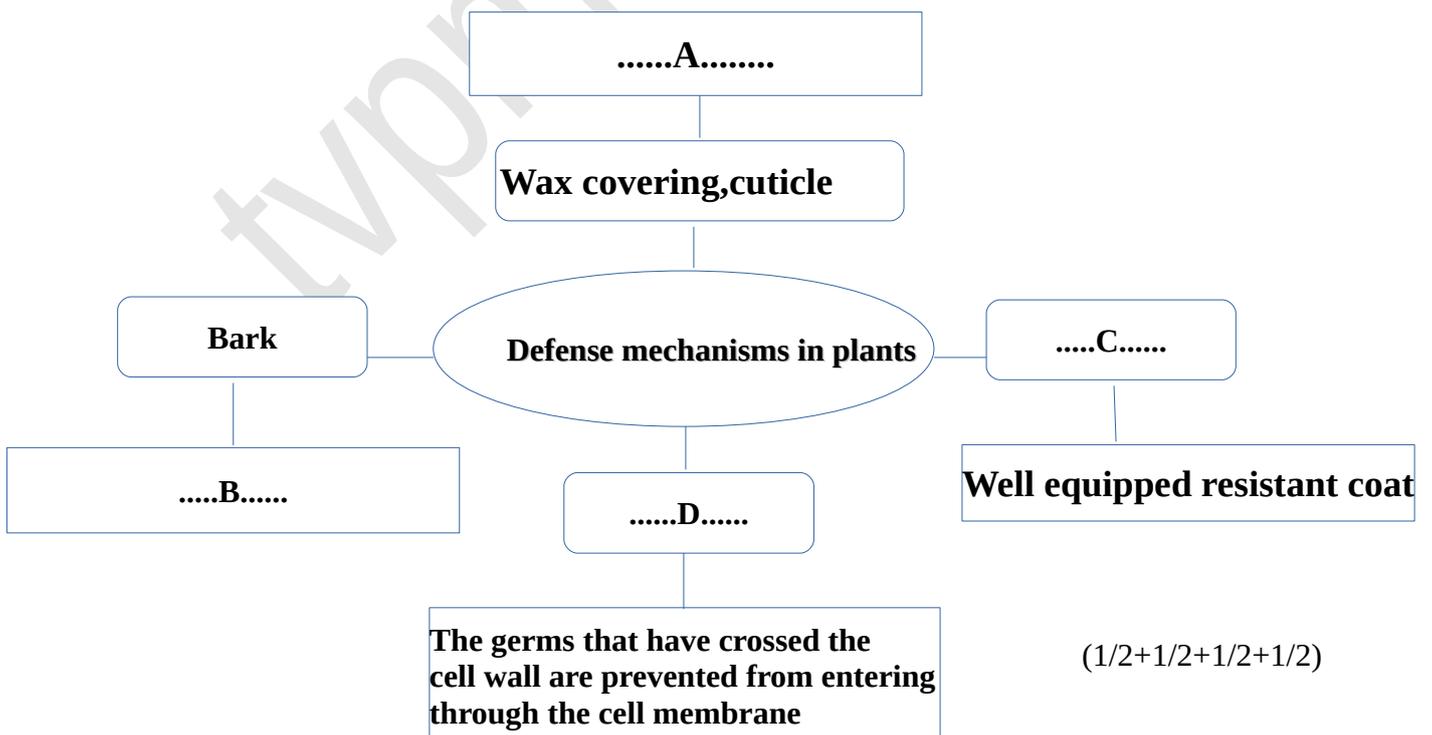
- a) Identify the above photoreceptor. (1)  
 b) How does the deficiency of Vitamin A affect its function? (1)

15. Box A includes major vaccines and box B includes the diseases against which they are used. Match them appropriately.

A	B
<b>Vaccines</b> <hr/> a) BCG b) OPV c) MMR d) TT	<b>Diseases that can be prevented</b> <hr/> Tetanus. Measles, Mumps, Rubella Polio. Tuberculosis. Diphtheria.

(1/2+1/2+1/2+1/2)

16. Complete the illustration given below by including different defense mechanisms in plants.



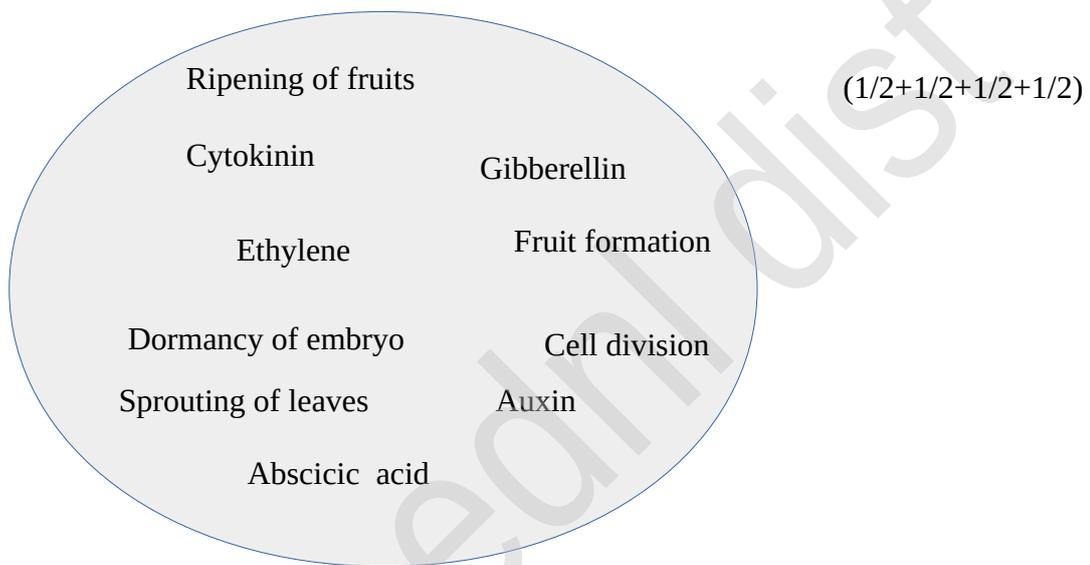
(1/2+1/2+1/2+1/2)

**17. A debate has been organised on the topic “The Merits and Demerits of Genetic Engineering.”**

List out one merit and demerit each of this technology. (1+1)

**18. Plant hormones and their functions are given in the box given below. Make suitable pairs using them. One example is given for you.**

**Eg: Ethylene : Ripening of fruits**



**19. The symptom of a genetic disease is given below. Read it and answer the questions.**

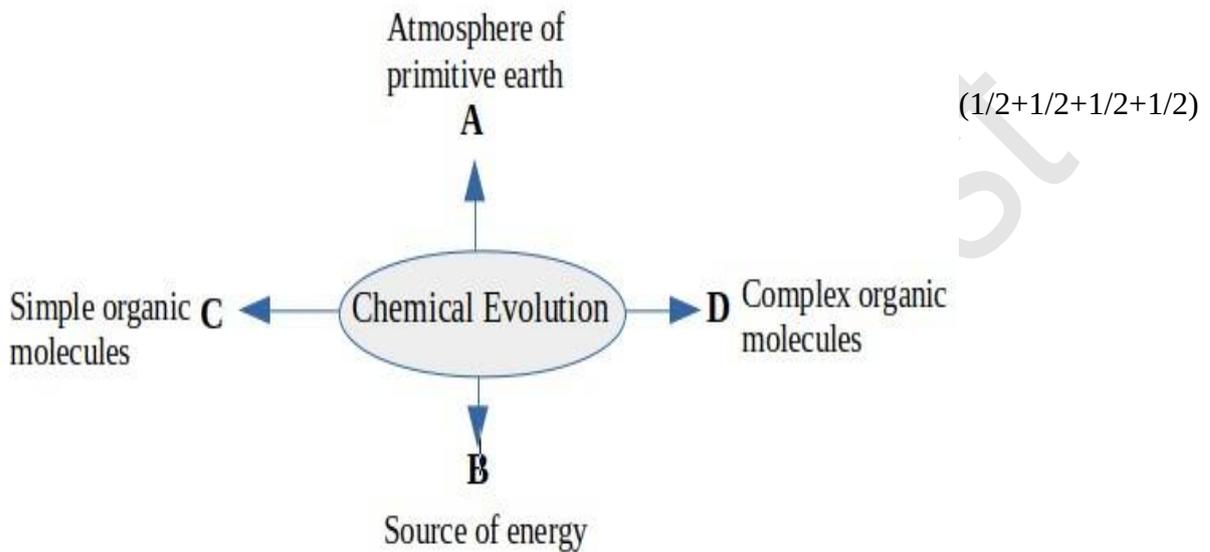
**“ Excess blood is lost even through minor wounds”**

a) Identify the condition? (1)

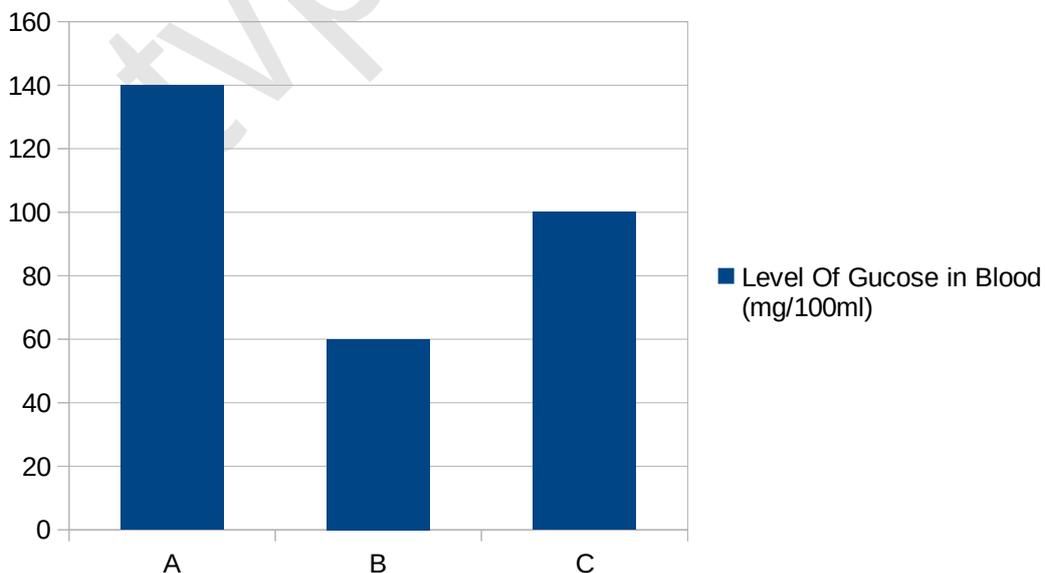
b) Why the condition is considered as a genetic disease? (1)

**20. An illustration related to chemical evolution is given below. Complete it using the informations given in the box.**

- i) Amino acids, Monosaccharides
- ii) Protein, Polysaccharides
- iii) Presence of H<sub>2</sub>, N<sub>2</sub>, CO<sub>2</sub>
- iv) Thunder and lightning

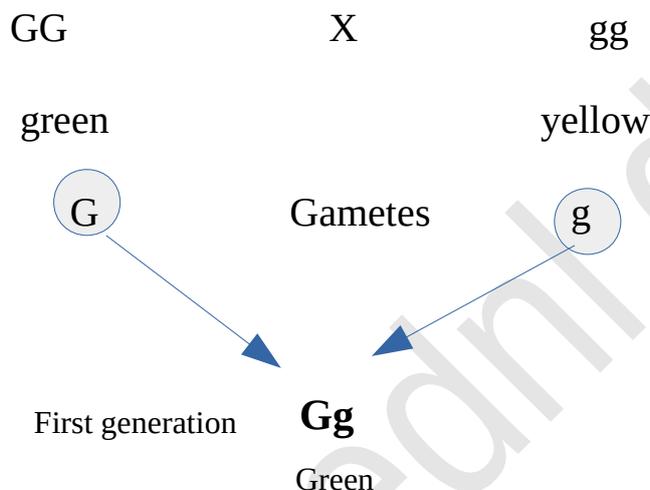


**21. The level of glucose in blood is maintained by the combined action of insulin and glucagon. The graph given below shows glucose level in three persons.**



- a) Which person is having the normal level of glucose in blood ? 1/2
- b) Which among the two hormones function in person B ? 1/2
- c) Write any one action of insulin to maintain the level of glucose in blood. 1

**22. Observe the illustration of the experiment conducted by Mendel using plants with green and yellow seed and answer the questions.**



- a) Identify the dominant character. (1)
- b) How does the parental plant with green coloured seed and the plant in the first generation differ in their alleles. (1)

**Questions 23 to 32 carries 3 score each.**

**23 . “Antibiotics are the miraculous medicines of this century. But its indiscriminate use is harmful”.**

Justify the statement by listing any three side effects of antibiotics. (1+1+1)

**24. Given below is a table related to eye disorders. Complete it suitably.**

Eye disorders	Reason	Symptoms
...A..	...B.....	Objects can not be seen clearly in dim light.
Colourblindness	..C..	..D..
..E..	Prolonged deficiency of Vitamin A	..F..

(1/2+1/2+1/2+1/2+1/2+1/2)

25. Given below are the different stages in the process of experiencing taste. Analyse and arrange them in correct order.

- We experience taste.
- It generate impulses.
- Substances responsible for taste dissolve in saliva.
- Impulses reach the brain through the respective nerves
- Stimulate the chemoreceptors
- Reaches the taste buds

(1/2+1/2+1/2+1/2+1/2+1/2)

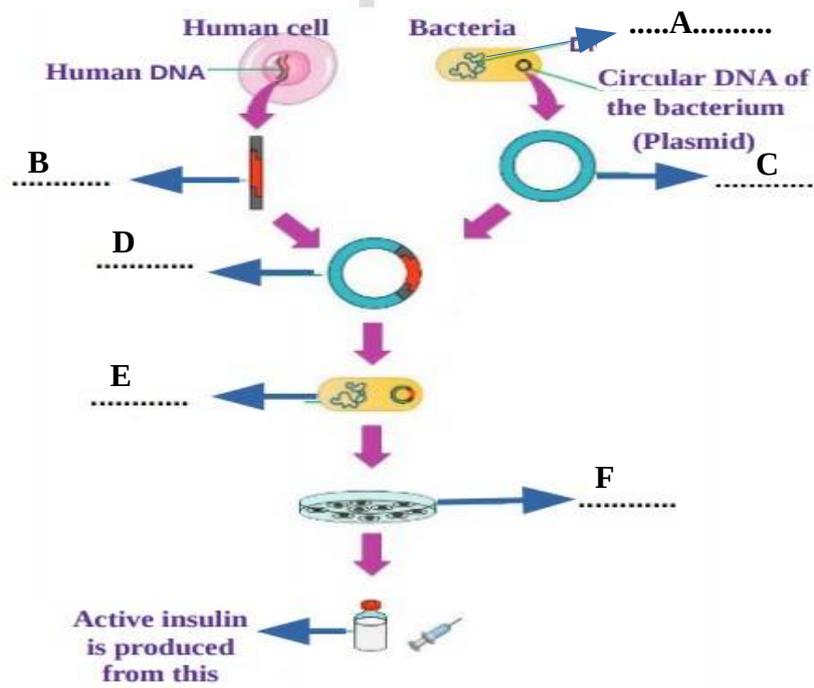
26. Observe the figure and answer the Questions.



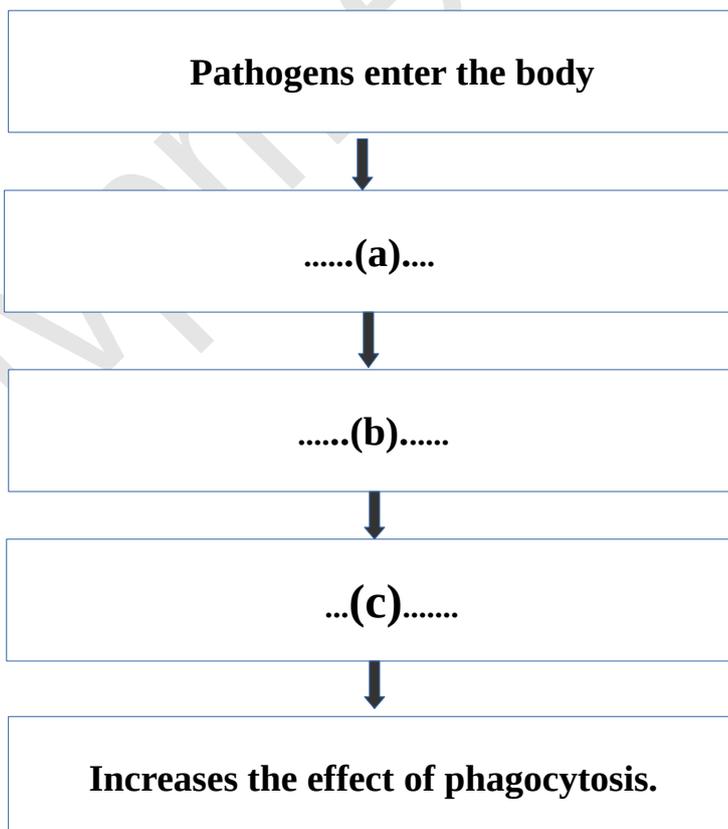
- Identify the figure.
- Identify X and Y.
- How do X and Y differ in their function?

(1)  
(1/2+1/2)  
(1)

27. Complete the stages of insulin production through genetic engineering appropriately. (1/2+1/2+1/2+1/2+1/2+1/2)

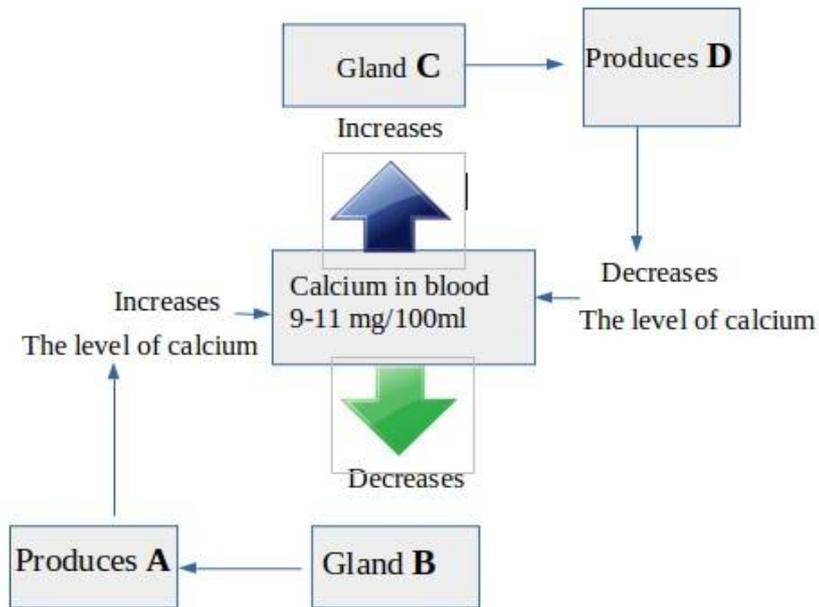


28. "Fever is not a disease but a defence mechanism" Justify the statement by completing the flow chart.



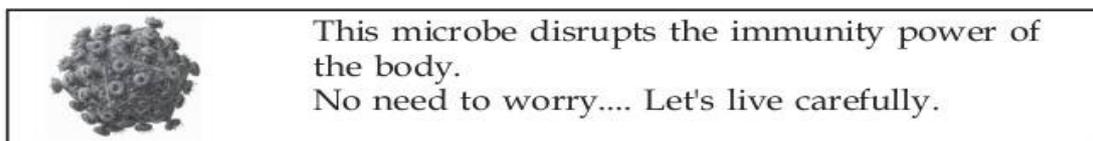
(1+1+1)

29. Observe the illustration related to the regulation of calcium in blood and answer the questions.



- Name the hormones A & D (1/2+1/2)
- Name the glands B & C. (1/2+1/2)
- How does A regulate the level of calcium in blood? (1)

30. Shown below is the presentation slide prepared by Meena as a part of her research work.



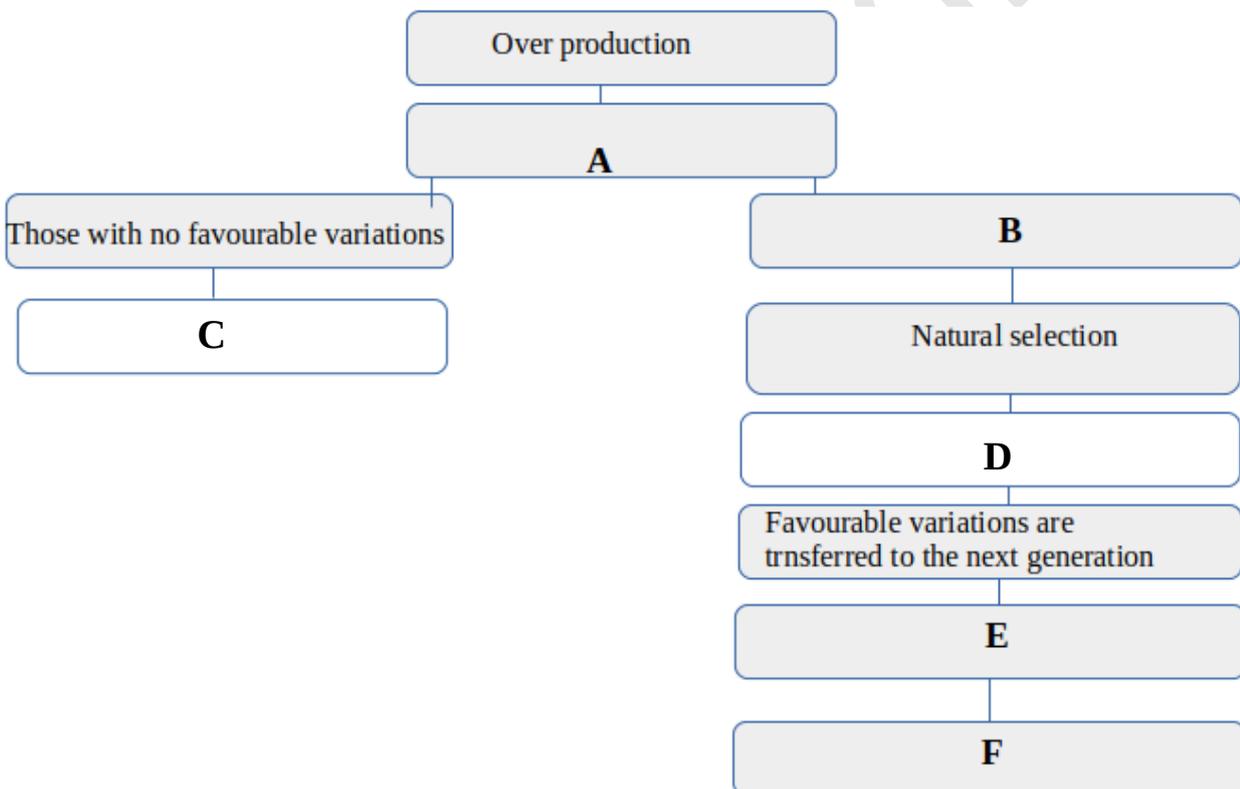
- Which is the microorganism mentioned in the slide? Name the disease caused by it? (1/2+1/2)
- How does it affect the immunity of the body? (1)
- Write any two ways by which one gets infected with this microorganism ?

( 1/2+1/2)

**31. Complete the illustration showing the origin of new species by means of Natural Selection by selecting suitable words from the box given below.**

(1/2+1/2+1/2+1/2+1/2+1/2)

Destroyed	Those with favourable variations
Origin of new species	Struggle for existence
Survive	Accumulation of variations inherited through generations

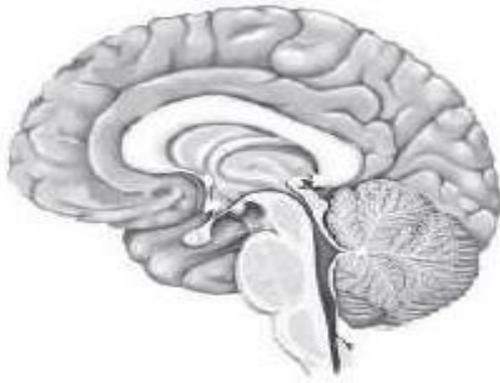


**32. It is decided to conduct an awareness class on the harmful effects of smoking by the school Health club.**

- a) Prepare a poster showing the danger of smoking. (2)
- b) Name any two organs affected by smoking. (1)

**Questions 33 to 36 carries 4 score each.**

33. Redraw the figure ,identify the parts mentioned and label them.



(1)

a) The part that evokes sensations.

(1)

b) The part that coordinates muscular activities and maintain equilibrium of the body.

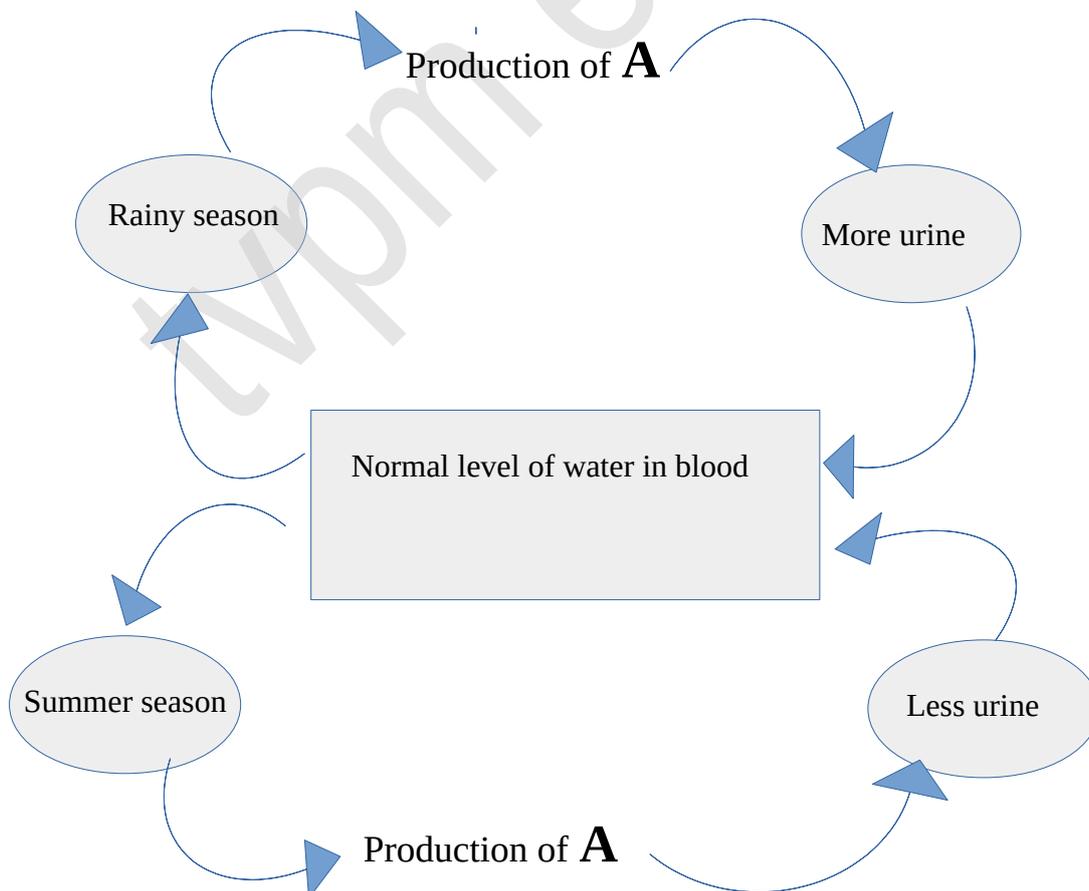
(1)

c) The part that act as relay station of impulses.

(1)

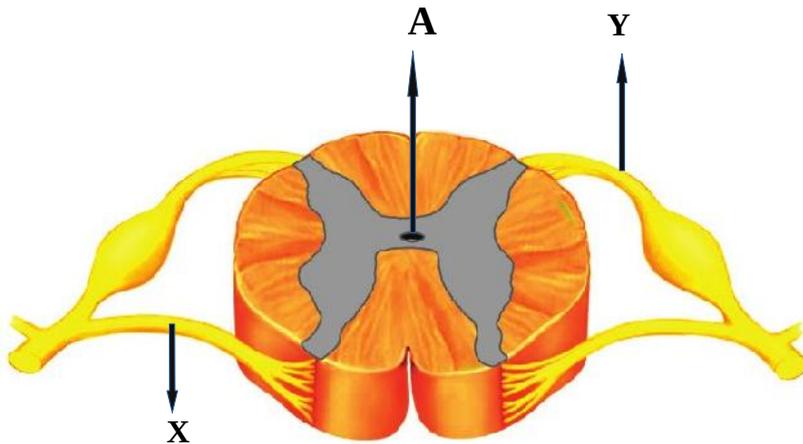
34. Given below is an illustration of how the normal level of water is maintained in blood during rainy season and summer season.

Analyse the illustration and answer the questions given below .



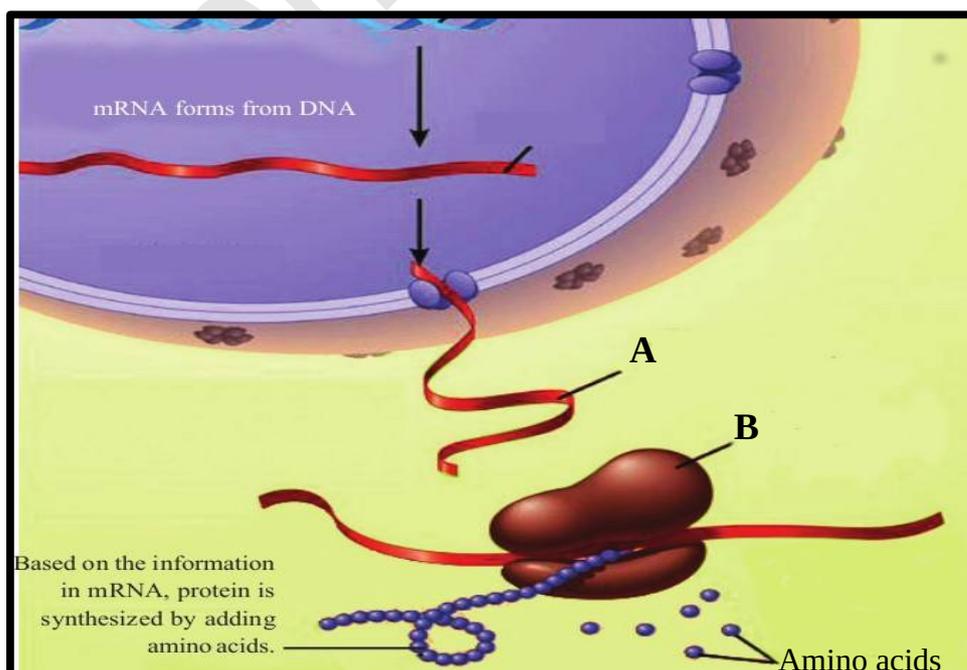
- a) Identify **A**. (1)
- b) Explain how **A** act to produce more urine during rainy season and less urine during summer season. (1+1)
- c) Name the gland that produce **A**. (1)

35. Identify the figure and answer the following questions.



- a) Identify the part labelled as A and the fluid present in it . (1/2+1/2)
- b) Identify X and Y. (1/2+1/2)
- c) What is the difference in the function between X and Y? (1+1)

36. Observe the illustration given below and answer the questions.



- a) Identify A & B. (1/2+1/2)
- b) What is the function of A? (1)
- c) Explain the process that take place in B? (1)
- d) What is the role of tRNA in protein synthesis? (1)
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