



**BIOLOGY**

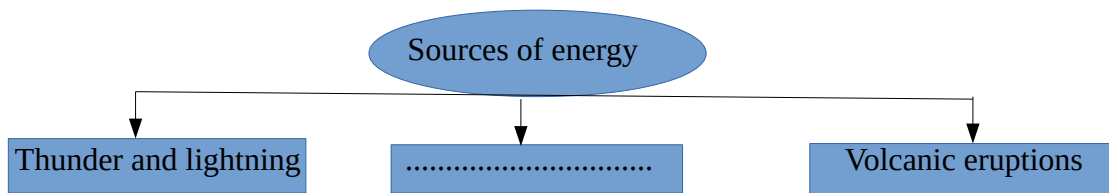
**A Section (Focus Area)**

**B Section (Non focus Area)**

**PART I**

**A. Answer any four questions from 1 to 6. Each carries 1 score**

- Find the word pair relationship and fill in the blanks  
T lymphocytes : Thymus gland  
B lymphocytes :-----
- Find the odd one out and write the common features of others  
Bombykol, Civetone, Parathormone, Musk
- Name the factor that classify blood groups into +ve and -ve.
- From the following situations identify the situation in which genetic engineering is used
  - Yeast is used to prepare bread
  - Bacteria that produces insulin
  - Curd is prepared from milk
  - Fungi are used to convert sugar into alcohol
- Complete the following illustration which shows the sources of energy in primitive earth



- Analyse the following symptoms of a disease that affect the nervous system and identify the disease
  - loss of body balance
  - irregular movement of muscles
  - profuse salivation
  -

**B. Answer all questions from 7to9. Each carries 1 score**

- Find the correct pair

*ECG: to record electric waves in the brain*  
*Ultrasound scanner: to record electric waves in the heart muscle*  
*MRI scanner :to get the three dimensional visuals of internal organs*

- Write the correct answer from the choices given in the bracket

Thick chin and large teeth, Had the ability to stand erect

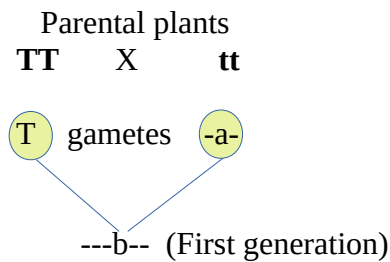
(Homo habilis, Australopithecus afarensis, Ardipithecus ramidus, Homo erectus)

9. From the following which action causes the change in the size of the iris depending on the intensity of light
- Action of ciliary muscles.
  - Contraction of ligaments.
  - Contraction and relaxation of muscles in the iris.
  - Change in the curvature of the lens.

### PART II

#### A. Answer the following question .Carries 2 score

10. In the illustration given below tall plant is hybridised with dwarf plant



- Fill in the blanks appropriately
- Which trait is dominant in the first generation

#### B. Answer any one question from 11 to 12.Each carries 2 scores

11. Observe the following table and answer the questions.

*Hint: X is a hormone; Y is a gland*

X	Slows down the action of defence cells
Y	Control the activities of T lymphocytes

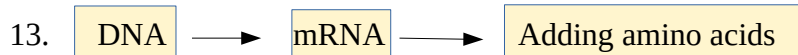
Identify and write X and Y

12. Given below are some proteins produced through genetic engineering used for the treatment of diseases in humans. Fill in the blanks.

Protein required for treatment	Disease/symptom
Interferons	Viral diseases
Insulin	------(a)-----
Endorphin	------(b)-----
Somatotrophin	Growth disorders

### PART III

#### A. Answer any three questions from 13 to 16. Each carries 3 scores



- Which process does the illustration represent?
- Why are mRNA considered the messengers of DNA?
- What is the role of tRNA and ribosomes in this process?

14. Parts related to hearing are given below. Prepare a flow chart starting from oval window to cerebrum.

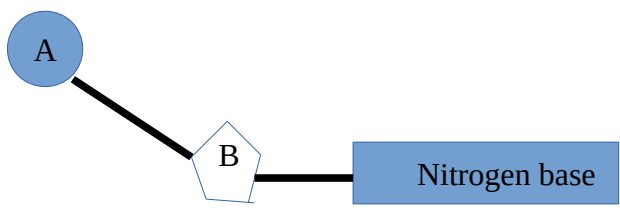
a) Auditory nerve b) Endolymph c) Hair cells d) Oval window. e) Cerebrum. f) Basilar membrane

15. Observe the poster and answer the questions.



- a) How do vaccine protect our body
- b) Write any two components in vaccines

16. Observe the illustration and answer the given questions



- a) Identify and name the illustration.
- b) What does A and B indicate?
- c) Write the type of B which is only present in DNA molecule

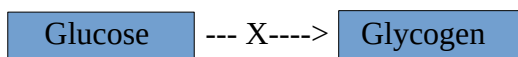
**B. Write down the answer of the following question**

17 Write down any three physical activities that are slowed down by the action of sympathetic system?

**PART IV**

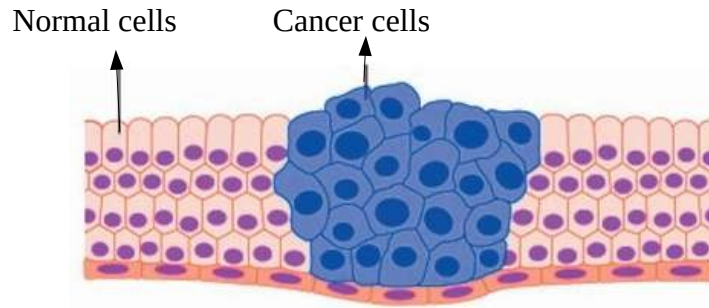
**A. Answer any two question from 18 to 20. Each carries 4 scores**

18 Observe the illustration and answer the questions



- i) Name the hormone denoted as X
- ii) Name the condition that happened due to the decrease in the level of this hormone
- iii) Write down the two actions of this hormone to regulate the level of glucose

19) Observe the figure



- a) How do normal cells change into cancer cells.
- b) Write any four reasons for cancer.

20) Following are the main concepts of natural selection by Charles darwin. Analyse them and answer the questions

Over production, Struggle for existence, Survival of the fittest, Variations

- i) Which are the circumstances that leads to severe competition among organisms
- ii) How do origin of species occur through natural selection

**B. Answer any one question from 21 to 22. (4 score)**

21. Analyse the symptoms of the following disease and write the answers of the questions given

Fever, throat pain inflammation in the lymph glands of the throat ,ash coloured thick coating in the throat

- a) Write the name of disease and pathogen
- b) Which vaccine is used against this disease
- c) “Prevention is better than cure”. This slogan is very apt for this disease. why?

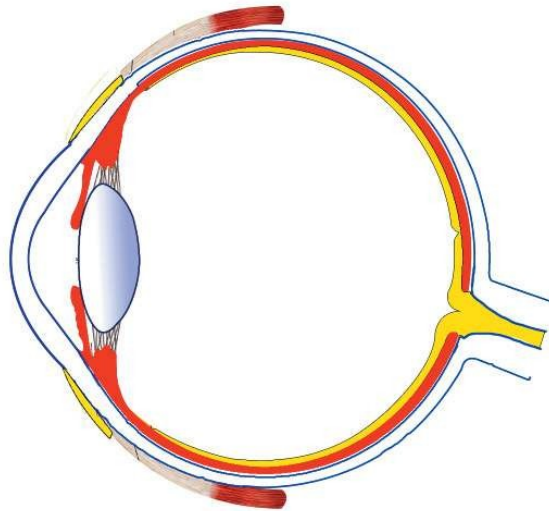
22. Arrange B and C according to column A

A ORGANISMS	B RECEPTORS	C PECULIARITIES
Planaria	Jacobson’s organ	Detect the change in the balance of the body
House fly	Lateral line	To detect light
Shark	Ommatidia	To detect smell
Snake	Eye spot	Formed of thousands of small eyes

**PART V**

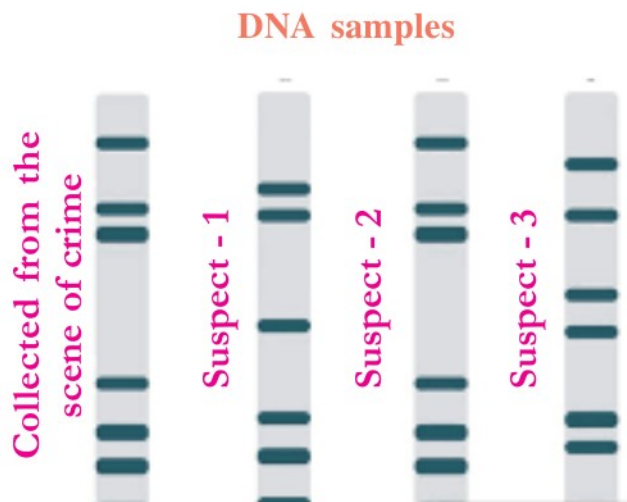
**A. Answer any one question from 23 to 24. Each carries 5 scores**

23. Redraw the diagram of eye and label the parts.



- a) Part which refracts light rays to focus on the retina.
- b) Transmits impulses from photoreceptors to the visual centre in the brain.
- c) The point of maximum visual clarity.
- d) The part seen between lens and the cornea.

24. Observe the illustration and answer the questions



- a) Identify the technique .
- b) Who invented this technique.
- c) What is the basis of this technology.
- d) Write any two scope of this technique.

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