



**DISTRICT PANCHAYATH KASARAGOD**

# **EQUIP 2023**

**(Educational Quality Improvement Programme for class ten)**

## **QUESTION POOL**



**Student Support Material for Class X**

**BIOLOGY**  
**ENGLISH MEDIUM**



**DIET KASARAGOD**

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## **EQUIP 2023**

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## ആശംസ

വികേന്ദ്രീകൃത ആസൂത്രണത്തിലൂടെയും നിർവ്വഹണത്തിലൂടെയും കേരളത്തിലെ ആരോഗ്യ വിദ്യാഭ്യാസ മേഖലകളെ ദേശീയ തലത്തിൽ ഒന്നാമതെത്തിക്കാൻ നമുക്ക് കഴിഞ്ഞിട്ടുണ്ട്. ഈ നേട്ടങ്ങൾ കൈവരിക്കാൻ പ്രാദേശിക ഭരണകൂടങ്ങൾ സ്തുത്യർഹമായ പങ്കുവഹിച്ചു. കോവിഡ് പ്രതിസന്ധി രൂക്ഷമായപ്പോൾ കേരളത്തിലെ പൊതു വിദ്യാഭ്യാസ മേഖല നിശ്ചലമാകാതെ മുന്നോട്ടുകൊണ്ടുപോകാൻ നാമെല്ലാം കൈകോർത്തു പിടിച്ചുകൊണ്ട് ശ്രമിച്ചു. എന്നിരുന്നാലും മുഖാമുഖ പഠനാനുഭവങ്ങളുടെ അഭാവം വിദ്യാർത്ഥികൾക്ക് പഠനവിടവുകളും പഠനനഷ്ടങ്ങളും ഉണ്ടാക്കിയിട്ടുണ്ട്. ഈ പ്രശ്നം പരിഹരിക്കുന്നതിനുവേണ്ടി കാസറഗോഡ് ജില്ലാ പഞ്ചായത്തിന്റെ നേതൃത്വത്തിൽ പൊതുവിദ്യാഭ്യാസ വകുപ്പും കാസറഗോഡ് ഡയറ്റും ഒത്തുചേർന്ന് നടപ്പാക്കുന്ന 'എക്വിപ്പ്' (EQUIP) പഠനപരിപോഷണ പരിപാടിക്ക് എല്ലാ പിന്തുണയും ഉറപ്പുതരുന്നു. പത്ത് വർഷത്തെ പഠനപ്രവർത്തനങ്ങളുടെ മികവിന്റെ അടയാളമായി മാറുകയാണ് പത്താം ക്ലാസിലെ വാർഷിക പരീക്ഷ. അറിവിന്റെ തെളിമയോടെ ഓരോ വിദ്യാർത്ഥിക്കും പരീക്ഷ എഴുതാൻ കഴിയണം. വിദ്യാർത്ഥികളുടെ ജീവിതത്തിലെ ഏറ്റവും പ്രധാനപ്പെട്ട പരീക്ഷകൾക്ക് വേണ്ടി തയ്യാറാക്കിയ ചോദ്യബാങ്കിന് എല്ലാവിധ ആശംസകളും നേരുന്നു. നന്നായി പഠിക്കുക. പരീക്ഷയെ സധൈര്യം നേരിടുക. തളരാതെ മുന്നോട്ട്. വിജയം നിങ്ങളോടൊപ്പമുണ്ട്. ആശംസകൾ.

ശ്രീമതി ബേബി ബാലകൃഷ്ണൻ  
ജില്ലാ പഞ്ചായത്ത് പ്രസിഡന്റ്  
കാസറഗോഡ്





## ആശംസ

കാസർകോട് ജില്ലാ പഞ്ചായത്തിന്റെ നേതൃത്വത്തിൽ ജില്ലയിലെ പൊതുവിദ്യാഭ്യാസ മേഖലയെ ശക്തിപ്പെടുത്തുന്നതിന് നിരവധി പ്രവർത്തനങ്ങളാണ് നടന്നുവരുന്നത്. കോവിഡ്-19 നമ്മുടെ ശ്രമങ്ങളെ പിന്നോട്ടടിക്കാൻ ഒരു പരിധിവരെ കാരണമായിട്ടുണ്ടെങ്കിലും, അതിനെയാക്കെ അതിജീവിച്ചുകൊണ്ട് പൊതുവിദ്യാഭ്യാസ മേഖലയെ പൂർവ്വാധികം കരുത്തോടെ നാം മുന്നോട്ട് നയിക്കുകയാണ്. ഈ ഘട്ടത്തിലാണ് കാസറഗോഡ് ജില്ലാ പഞ്ചായത്തും, പൊതുവിദ്യാഭ്യാസ വകുപ്പും, വിദ്യാഭ്യാസ പരിശീലന കേന്ദ്രവും (DIET) പത്താം ക്ലാസ് വിദ്യാർത്ഥികളുടെ പഠനവിടവുകൾ പരിഹരിക്കുന്നതിനും ആത്മവിശ്വാസത്തോടെ പൊതുപരീക്ഷയെ നേരിടാൻ അവരെ പ്രാപ്തരാക്കുന്നതിനും വേണ്ടി പഠനപരിപോഷണ സാമഗ്രി തയ്യാറാക്കുന്നത്. കുട്ടികളുടെ അക്കാദമിക മികവ് ഉറപ്പുവരുത്തിക്കൊണ്ട് മികച്ച ശ്രേണികൾ നേടാൻ അവരെ സജ്ജമാക്കാൻ 'എക്സിറ്റ് 2023' എന്ന പേരിൽ ഡയറ്റ് കാസർകോട് തയ്യാറാക്കിയ ഈ പദ്ധതിക്ക് കഴിയട്ടെയെന്ന് ആശംസിക്കുന്നു.

സ്നേഹപൂർവ്വം

**അഡ്വ. സരിത എസ്.എൻ.**

ആരോഗ്യ-വിദ്യാഭ്യാസ സ്ഥിരം സമിതി

അധ്യക്ഷ, ജില്ലാ പഞ്ചായത്ത്,

കാസർകോട്





**ആശംസ**

ഈ വർഷം എസ്.എസ്.എൽ.സി. പരീക്ഷ എഴുതുന്ന വിദ്യാർത്ഥികൾക്ക് ജില്ലാ പഞ്ചായത്തിന്റെയും ഡയറ്റിന്റെയും സഹായ സംരംഭമാണ് **EQUIP** പഠനപുസ്തകം. ഇംഗ്ലീഷ്, കണക്ക്, ഫിസിക്സ്, കെമിസ്ട്രി, ബയോളജി, സോഷ്യൽ സയൻസ് എന്നീ വിഷയങ്ങളെ അടിസ്ഥാനമാക്കി യൂണിറ്റുകൾ സമഗ്രമായും കണ്ട് ഓരോ പുസ്തകവും, ഭാഷാ വിഷയങ്ങളെ മൊത്തമായി ഉൾക്കൊള്ളിച്ച് ഒരു പുസ്തകമായുമാണ് EQUIP തയ്യാറാക്കിയിരിക്കുന്നത്.

ഉത്തരം പഠിക്കുന്നതിന് പകരം ചോദ്യങ്ങളിലൂടെ ഉത്തരത്തിലേക്ക് എത്തി ചിന്താശേഷിയും രചനാ രീതിയും പരിശീലിച്ച് പാഠഭാഗത്തിന്റെ ആശയം ഉൾക്കൊള്ളുക എന്ന രീതിയാണ് EQUIP അടിസ്ഥാനമാക്കുന്നത്.

വിദ്യാലയങ്ങളിലെ പരിചയ സമ്പന്നരായ അധ്യാപകർ നൽകുന്ന നിർദ്ദേശത്തോടെ കോറോണ കാലത്തെ പഠന വിടവ് അനുഭവിച്ച ഒരു ബാച്ചിന് ആവശ്യമായ കൈത്താങ്ങ് EQUIP നൽകും.

EQUIP പഠനസാമഗ്രി ജില്ലയിലെ പത്താം ക്ലാസ്സ് വിദ്യാർത്ഥികൾക്ക് ഏറ്റവും മികച്ച വിജയത്തിനുള്ള ചവിട്ടുപടി ആവട്ടെയെന്ന് ആഗ്രഹിക്കുന്നു. ജില്ലാ പഞ്ചായത്തിന്റെയും ഡയറ്റിന്റെയും സംരംഭത്തിന് എല്ലാ ആശംസകളും നൽകുന്നു.

**വാസു സി.കെ.**  
ജില്ലാ വിദ്യാഭ്യാസ ഉപഡയറക്ടർ  
കാസർകോട്





## ആമുഖം

ജില്ലയിലെ അക്കാദമിക പ്രവർത്തനങ്ങളെ ഏകോപിപ്പിച്ച് മുന്നോട്ട് നയിക്കുന്ന ഉത്തരവാദിത്തമാണല്ലോ ജില്ലാ വിദ്യാഭ്യാസ പരിശീലന കേന്ദ്രങ്ങൾ (DIET) കാലങ്ങളായി ചെയ്തുവരുന്നത്. മനുഷ്യവിഭവശേഷിയിൽ പരിമിതികൾ ഉള്ളപ്പോൾ തന്നെ പ്രീ-പ്രൈമറി തലം മുതൽ ഹയർ സെക്കൻഡറി തലം വരെയുള്ള മേഖലകളിൽ വിവിധങ്ങളായ പദ്ധതികൾ ആസൂത്രണം ചെയ്യാനും നിർവഹിക്കാനും ഡയറ്റുകൾക്ക് ഇതുവരെ കഴിഞ്ഞിട്ടുണ്ട്. പത്താം തരത്തിലെ കുട്ടികളുടെ പഠനപ്രശ്നങ്ങൾ മറികടക്കാൻ കഴിഞ്ഞ കുറച്ച് വർഷങ്ങളായി കാസറഗോഡ് ഡയറ്റ് നടപ്പിലാക്കുന്ന പദ്ധതിയാണ് **EQUIP (Educational Quality Improvement Programme)**. അതതു വർഷത്തെ കുട്ടികളുടെ പഠനപ്രശ്നങ്ങൾ പരിഗണിച്ചുകൊണ്ടാണ് പ്രവർത്തനങ്ങൾ ചിട്ടപ്പെടുത്തുന്നത്. ഈ പദ്ധതിയുടെ ഭാഗമായി പത്താംതരം പരീക്ഷയെ അഭിമുഖീകരിക്കാൻ കുട്ടികളെ സഹായിക്കുന്ന വിവിധ വിഷയബന്ധിതമായ ചോദ്യ മാതൃകകൾ പരിചയപ്പെടുത്താനാണ് ഉദ്ദേശിക്കുന്നത്. ജില്ലാ പഞ്ചായത്തിന്റെ സഹായത്തോടെ മലയാളത്തിലും ഇംഗ്ലീഷിലും കന്നഡയിലും ഏഴ് പുസ്തകങ്ങൾ (വ്യത്യസ്ത വിഷയങ്ങൾ) അച്ചടിച്ച് ഓരോ മാധ്യമത്തിലും ഓരോ കോപ്പി സ്കൂളുകളിൽ നൽകാനാണ് ഉദ്ദേശിക്കുന്നത്. ഈ അധ്യയന വർഷം പത്താംതരം പരീക്ഷ എഴുതുന്ന മുഴുവൻ കുട്ടികൾക്കും ഈ പദ്ധതിയുടെ പ്രയോജനം ലഭിക്കുമെന്ന് പ്രതീക്ഷിക്കുന്നു. വ്യത്യസ്ത പഠനവേഗതയും പഠനമികവുമുള്ള എല്ലാ വിഭാഗം കുട്ടികൾക്കും ഈ സാമഗ്രി പ്രയോജനപ്പെടട്ടെ എന്ന് ആശംസിക്കുന്നു. അധ്യാപകരുടെ ആത്മാർത്ഥമായ പിന്തുണയും പ്രോത്സാഹനവും അനിവാര്യമായ ഈ ഉദ്യമത്തിൽ എല്ലാവരുടെയും സഹായ സഹകരണങ്ങൾ പ്രതീക്ഷിച്ചുകൊണ്ട് ഏവർക്കും വിജയാശംസകൾ നേരുന്നു.

ആശംസകളോടെ,

**ഡോ. രഘുരാമ ഭട്ട് കെ.**

പ്രിൻസിപ്പാൾ

ഡയറ്റ് കാസർകോട്



# **BIOLOGY**

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*English Medium*



**EQUIP - DIET KASARAGOD**  
**SSLC QUESTION POOL**

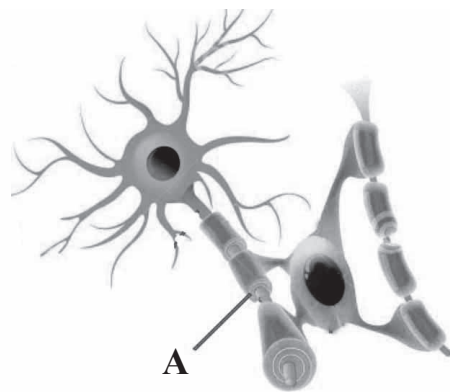
**BIOLOGY - ENGLISH MEDIUM**

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**Questions (1 Score)**

1. Find out the odd one and write the common features of others.  
Cornea, Oval window, Conjunctiva, Iris
2. Give answer like the model given below.  
Bud rot of coconut - Fungus  
Mosaic disease of tapioca - .....
3. Choose the correct pair?  
Myelin sheath - Axonite  
Schwann cells - Brain  
Oligodendrocyte - Spinal cord
4. Find out the different one. Write the common characters of others.  
(Muscone, Cytokinin, Civetone, Bombykol)
5. Which connects the sensory neuron to the motor neuron in a reflex arc?
6. Rhodopsin is the pigment in rod cells. What is the pigment in cone cells?
7. Identify the viral disease among those given in bracket?  
(Leptospirosis, Diphtheria, Nipah, Tuberculosis)
8. In blood clotting process the enzyme thrombin is formed from the protein prothrombin. What is formed from Fibrinogen?
9. Observe the given example. Fill up the second one?  
Pain - Endorphin  
Viral diseases - .....
10. .... is a genetic disease.  
(AIDS, Sickle cell anaemia, Dengue, Hepatitis)

11. Find the odd one out.  
(Struggle for existence, Natural selection,  
Self acquired characters, Favourable variations)
12. Name the vaccine against Tuberculosis.  
(OPV, MMR, BCG, TT)
13. Which RNA transfers the message from DNA?  
(rRNA, mRNA, tRNA)
14. List out pheromones from the bracket?  
(Cortisol, Civetone, Gibberellin, Bombykol)
16. Fill in the blanks using the pair relationship.  
Genetic glue - Ligase  
Genetic Scissors - .....
16. Observe the picture and name the part which marked A?



17. Name the most primitive member of human race?  
(Homo habilis, Ardipithecus ramidus,  
Astralopithecus afarensis, Homo erectus)
18. Choose the right statement?
- Radial muscles contract in dim light
  - Pupil contracts in dim light
  - Circular muscles contract in dim light
  - Pupil dilates in intense light

19. Find the word pair relationship and fill in the blanks appropriately

Diphtheria : Coryne bacterium diphtheriae

Rat fever : .....

20. Identify the odd one and write the common feature of others?

- Diabetes mellitus
- Fatty liver
- Sickle cell anaemia
- Hyper tension

21. Fill in the blanks suitably

The enzyme ..... is used to cut the genes. The enzyme is known as genetic scissors

22. Which part of the brain maintains balance of the body

- cerebrum
- cerebellum
- medulla oblongata
- thalamus

23. Which is not a bacterial disease?

- Blight disease
- inflammation of udder
- foot and mouth disease
- Tuberculosis

24. Rewrite the following sentences by correcting the false sentence?

Sickle cell anaemia is caused by the uncontrolled divisions of cells?

25. Find the word pair relationship and fill in the blanks appropriately

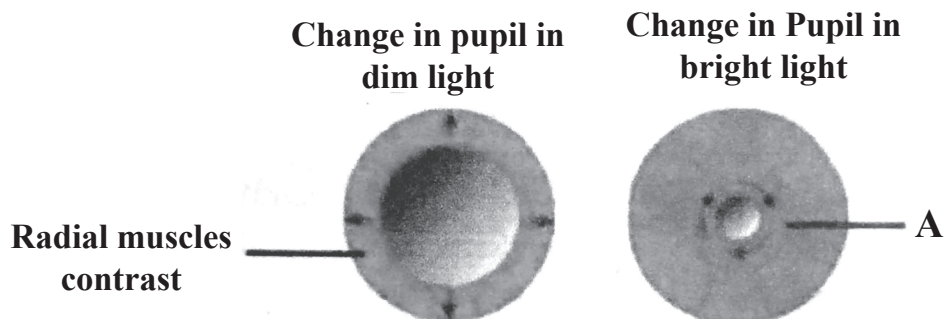
Hunger : .....

Touch : External stimuli

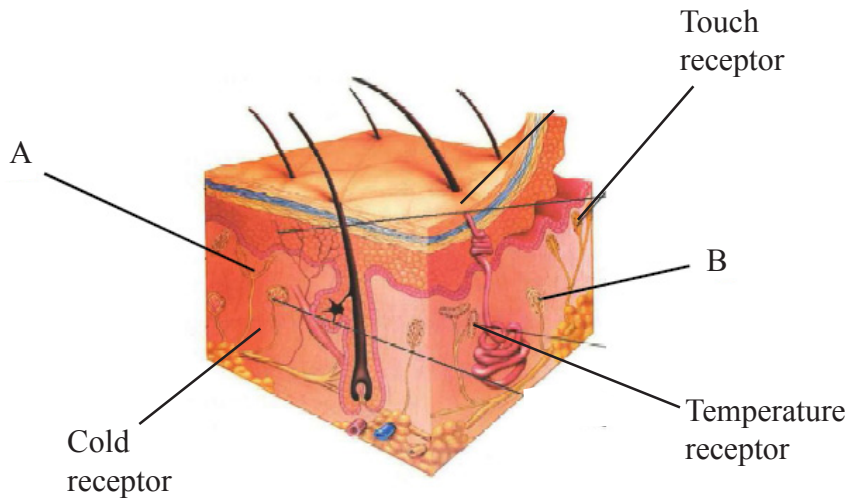
26. Identify the odd one and write the common feature of others?

- Ethylene
- Cytokinin
- Auxin
- Pheromones

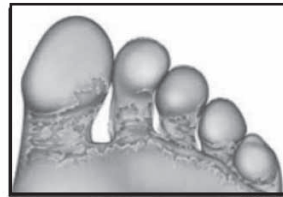
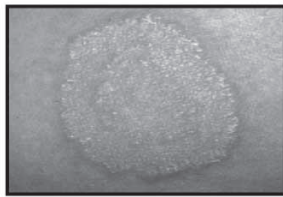
27. Who proposed mutation theory?
28. Which of the following is not made up of neurons?  
(Thalamus, Cerebrum, Pancreas, Hypothalamus)
29. Identify the odd one and write the common feature of others?  
(Sclera, Choroid, Retina, Yellow spot)
30. Identify the word pair relation and fill in suitably.  
Musk deer : Muscone  
Civet cat - .....
31. The Oxygen carrying capacity of red blood cells decreases. The sickle shaped RBC get collected in the blood vessels and block the blood flow. The symptom says about which disease?
32. Write down the false statements related to the T - lymphocytes?
- \* Neutralise the toxins of the antigens
  - \* Stimulate other defense cells of the body
  - \* Destroy the cells affected by virus
  - \* Destroy cancer cells
33. How many strands are present in the DNA?
34. Write the change in pupil in bright light?



35. Observe the illustration of Receptors in the skin and write A and B?



36. Which micro-organism causes the diseases shown in the picture?



37. Identify the word pair relation and fill in suitably?

Thyroid : Calcitonin

Parathyroid : .....

38. Choose the right statement from those given below

- \* The disability in cone cells causes glaucoma
- \* Night blindness is the deficiency disease of vitamin A
- \* Clear Image is formed in blind spot
- \* Vitreous fluid provides nourishment to the tissues of eye

39. Choose the right word pair

- \* Dopamine : Neuro transmitter
- \* Brain : 32 pair nerves
- \* Thalamus : Voluntary movement
- \* Epilepsy : To lose memory

40. Which membrane protect the brain?

- \* Myelin sheath
- \* Meninges
- \* Cerebrospinal fluid
- \* Synapse

41. Rewrite the following sentences by correcting the underlined word if it is wrong?

- \* A protein called keratin present in epidermis prevents the entry of germs
- \* Wax covering prevents the germs which crosses the cell wall.

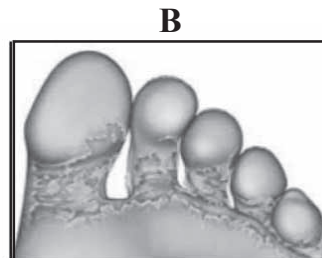
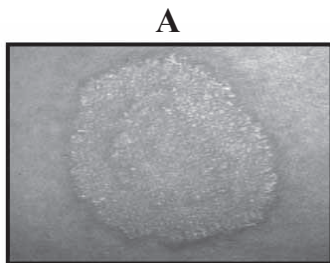
42. Identify the odd one and write the common feature of the others?

- \* Auxin
- \* Ehylene
- \* Cytokinin
- \* Insulin

43. Write sympathetic activity

- \* Increases the heart beats
- \* Trachea contracts
- \* The pupil in the eye contracts
- \* Production of saliva increases

44. Identify and name the following diseases.



45. Which is not a bacterial disease?

- \* Leptospirosis
- \* Tuberculosis
- \* Nipah
- \* Diphtheria

**Questions (2 score)**

46. Correct the flow chart by filling up the missed words.

Sound waves → Pinna .....(a)..... → Tympanum → Ear ossicles  
..... (b)..... → Cochlea → Hair cells → ..... (c)..... → Auditory nerve .....(d)... →  
Sense of hearing.

47. Why are the endocrine glands called as ductless glands? When a substance is formed then only the hormone will be activated in the cells. Name the substance.

48. An ash coloured coating is formed in the throat due to this disease. Name the disease and write the pathogen?

49. Who invented DNA finger printing, now a days uses to find out the evidence in crime. What is the base of DNA finger printing?

50. Fill up the column B, according to the column A.

A	B
Shark	Eye spot
Snake	Taste buds
House fly	Lateral line
Planaria	Jacobson's organ
	Ommatidia

51. The condition in which the pressure increases in aqueous chamber due to the blockage of reabsorption of aqueous humor is called .....  
How can we cure this?

52. Justify the statement given below:

- a) Smell can be detected only in the presence of mucus.
- b) Persons with colour blindness cannot distinguish between green and red colours.

53.

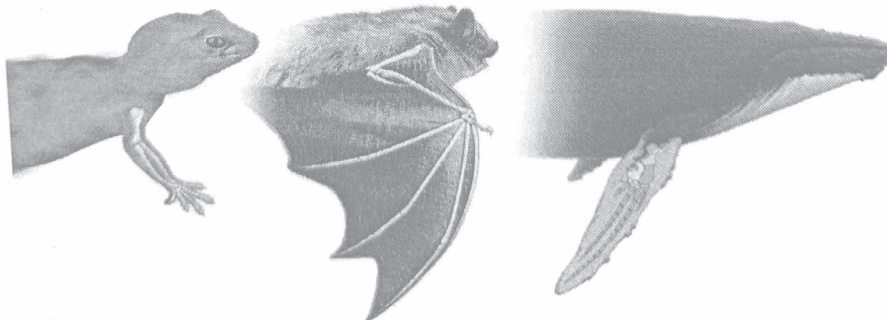
**DNA testing - Dead bodies identified**

Kollam : About twenty dead bodies of those who lost their lives in the Paravoor firework tragedy were identified through DNA test and handed over to relatives.

Didn't you read the news report?

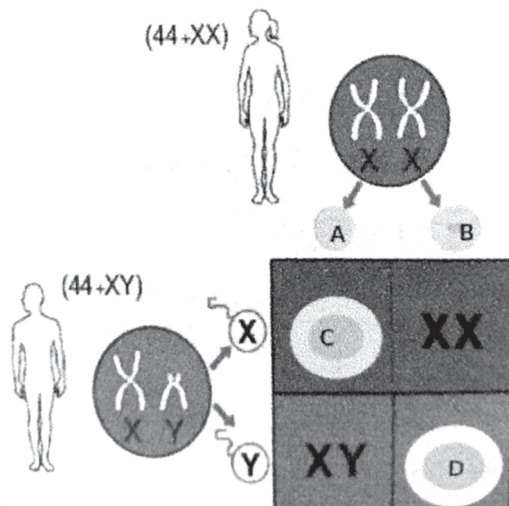
- a) What is the basis of DNA test?
- b) How is it possible to identify relations through DNA test?

54. The forelimbs of the organisms shown in the picture below, do not show any similarity. Hence they do not have any evolutionary relationship



How will you respond on this statement? Substantiate.

55. Observe the illustration and fill in A, B, C, D

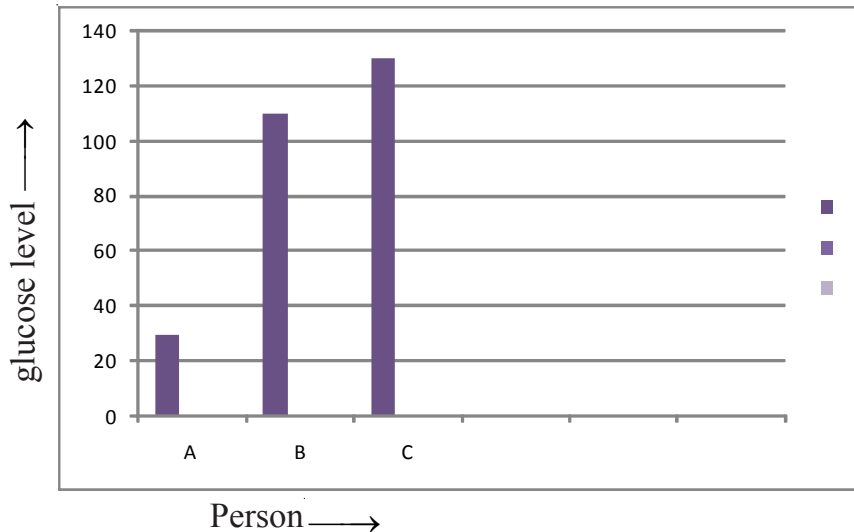


56. a) What is mutation?  
b) What are the causes of mutation?

57.



- a) This logo indicates which project?  
b) What is the relevance of Human genome project?
58. Observe the graph that shows the level of glucose in the blood of various individuals before breakfast.



- a) Who has normal level of glucose in blood?  
b) Which hormones regulate glucose level in blood?

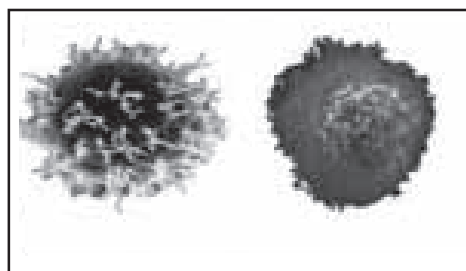
59. Arrange Column B of the table to match Column A.

A	B
1) Ardipithecus ramidus	Had the ability to stand erect
2) Homo habilis	Modern man
3) Homo erectus	Made weapons from stones and bone pieces
4) Homo sapiens	The most primitive member of the human race

60. Observe the illustration and write the name of white blood cells and their functions?



A



B

### Questions (3 score)

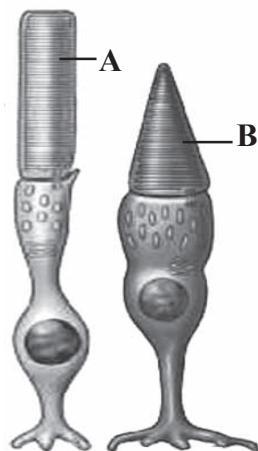
61. Write answers according to the given indicators

- a) The prolonged filament from the neuron cell body
- b) The part which secretes neurotransmitter
- c) The part which carries impulses to synaptic knob

62. Relate the columns A and B suitably

A	B
a) Night blindness	Defect of cone cells
b) Colour blindness	Cornea becomes opaque
c) Xerophthalmia	Loses clear vision in dim light

- 
1. Name the Vitamin related to Xerophthalmia?
  2. Write the colours which a colour blind person cannot identify?
  3. The part of colour pigment, which forms from Vitamin A?
- 
63. Name the hormone which secretes from the alpha cells of Islets of Langerhans  
Write any one function of this hormone?
  
  64. Write down the things about Tuberculosis given below.
    - a) Pathogen
    - b) Vaccine
    - c) Any one symptom
  
  65. What is the relation among Anthrooidea, Cercopithecoidea and hominoidea?  
Give one example each for cercopithecoidea and hominoidea?
  
  66. Make a table to compare both the nucleic acids  
( Indicators - Name of Nucleic acid,  
Type of Sugar, Nitrogen bases)
  
  67. Observe the picture and answer the questions given below.



- a) Sketch A and B.
- b) Where can we see these in the eye?
- c) What are the differences in functions of these?

68. AIDS is caused by HIV.

- a) Which cells are affected by AIDS?
- b) Write two conditions of HIV transmission?

69. Write the missed words in the table.

Disease	Cause	Symptoms
.....(a).....	Reduce production of Dopamine	.....(b).....
.....(c).....	.....(d).....	Frothy discharge from the mouth
Alzheimer's	.....(e).....	.....(f).....

70. Read the statement and answer the questions below.

"Excess blood is lost even through minor wounds"

- a) Name the disease?
- b) What is the cause of the disease?
- c) Write one remedial measure?

71. It is because of its taste that we like food. Given below are the different stages of experiencing taste. Analyse and arrange them in the correct order.

- a) Experience of taste
- b) Cause impulses
- c) Food particles dissolve in saliva
- d) Reaches in taste buds
- e) Impulses reach the brain
- f) Chemoreceptors get stimulated

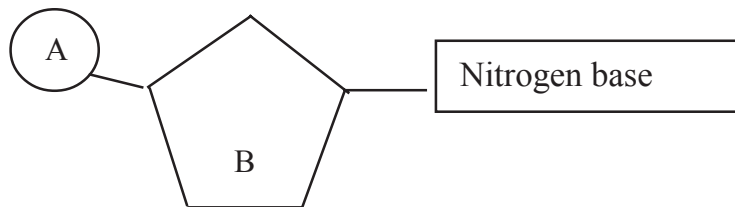
72. Chemical substances are secreted by certain animals to surroundings to facilitate communication.

- a) Name the chemicals
- b) Write two functions
- c) Write two examples

73. The stages in the process of protein synthesis are given below. Prepare a flow chart using the stages.

- a) tRNA carries different kinds of amino acids to the ribosome
- b) mRNA reaches outside the nucleus
- c) mRNA forms from DNA
- d) Amino acids are added based on the information in mRNA
- e) mRNA reaches in ribosome
- f) Proteins are synthesized

74.



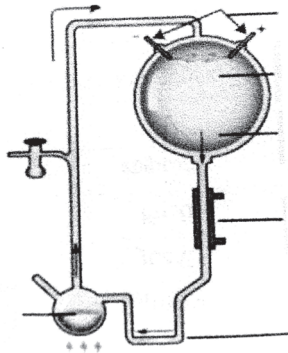
- a) Identify the figure?
- b) Write A and B?
- c) Which nitrogen base found only in RNA?

75. Analyse the table given below. Rearrange B and C according to the indicators in column A.

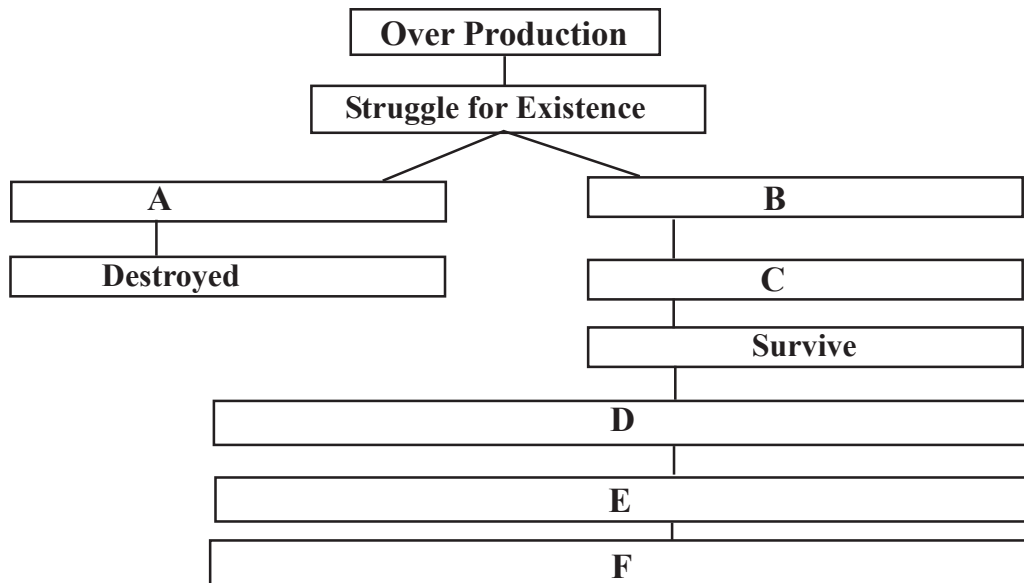
A	B	C
1) Situated above the Kidney	a) Hypothalamus	i) Calcitonin
2) Situated just below the larynx	b) Adrenal gland	ii) Oxytocin
3) Situated in the brain	c) Thyroid	iii) Epinephrine

76. a) What is DNA profiling?  
 b) What is the basis of DNA testing?  
 c) What are the uses of DNA testing?

77.



- a) Write the name of this experiment?  
 b) Which are the gases used in this experiment?  
 c) Which material is get sedimented?
78. Observe the illustration and with the help of given hints fill in A, B, C, D, E and F.



- \* Natural selection
- \* Favourable variations are transferred to the next generations
- \* Origin of new species
- \* Accumulation of variation inherited through generations
- \* Those with favourable variations
- \* Those with unfavourable variations

79. Fill in the blanks with suitable words.

	Number of Strands	Type of Sugar	Nitrogen bases
DNA			
RNA			

80. Complete the column B and C in accordance with column A?

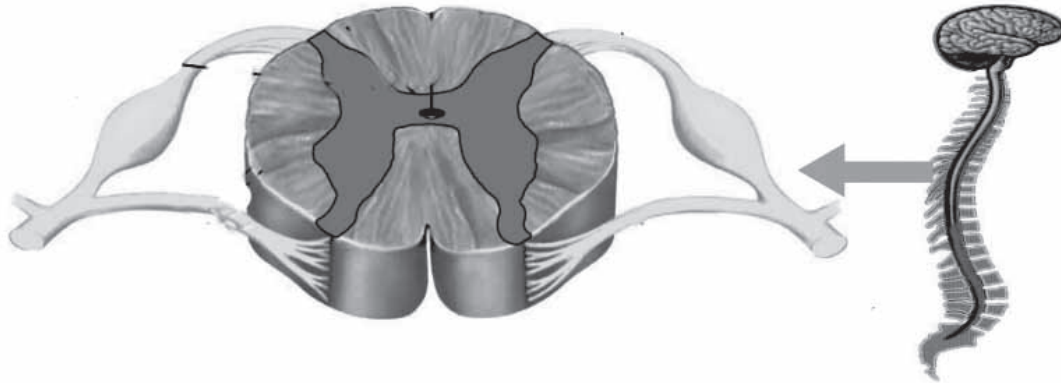
A	B	C
Planaria	Jacobson's organ	Body balance
Housefly	Lateral line	Light
Shark	Eye spot	Olfactory receptors
Snake	Ommatidia	Photoreceptors

81.



- a) In which part of the eye do these cells see?
  - b) Difference between A and B?
  - c) What is the cause of diversity in cone cells?
82. Which chemical help ants moving in a line along a particular trail?
- a) Two other functions of these chemicals?
  - b) Write two examples of these chemicals?
83. Observe the following statements about AIDS and write the correct ones.
- a) AIDS spreads through insects like mosquitoes, houseflies etc.
  - b) From HIV infected mother to foetus
  - c) AIDS spreads through cough, sneezing etc
  - d) Through the reception of blood and organs contaminated with HIV
  - e) By staying together and sharing food
  - f) Through sexual contact with HIV infected person

84. Do not use antibiotics without the recommendation of a Doctor. Why?
85. Observe the picture and answer the following questions



- a) Identify the picture?
- b) Which nerve passes through dorsal route?
- c) Fluid in the central canal?

### **Questions (4 score)**

86. A.I Oparin and JBS Haldane are famous persons who put forth the hypothesis about the origin of life. Name the hypothesis. Write two gases which were prevalent in the ancient earth. Name two simple organic molecules formed in the ancient earth. Which were the source of energy in the ancient earth?
87. Gene functions by producing proteins.  
Write the different phases of protein synthesis according to the instructions from DNA?
88. Now a days we commonly use antibiotics against pathogens.  
Which is the first antibiotic medicine? Who invented it?  
Write two side effects cause by continuous usage of Antibiotics?

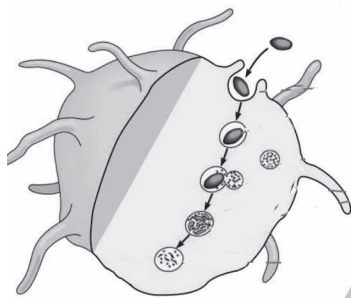
89. Match columns A, B, C by using the words in brackets.

(Planaria, Shark, Jacobson's Organ, Ommatidia, Lateral Line, Eyespot, Smell)

A	B	C
.....	.....	Light
.....	.....	Balancing
Snake	.....	.....
.....	.....	Light

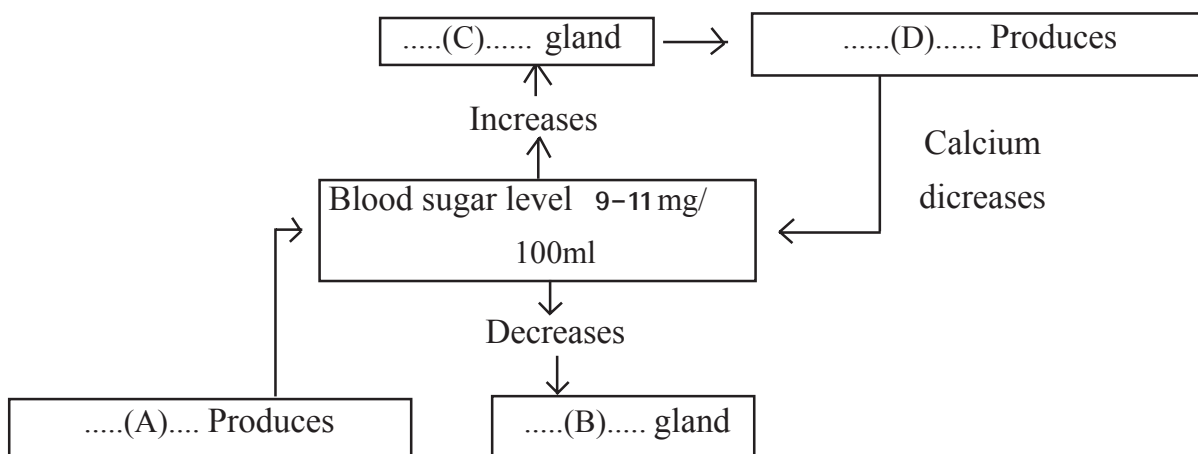
90. The living beings in the modern world are formed due to evolution. It says that all the creatures are formed from a common ancestor. State the evidences given by Biochemistry and Physiology for evolution?

91. Observe the picture and answer the questions given below.



- Which process does picture indicate?
- Which are the two white blood cells included in this process?
- Write the steps of this process?

92. Observe the given illustration and answer the questions.





95. Read the statement and answer the questions.

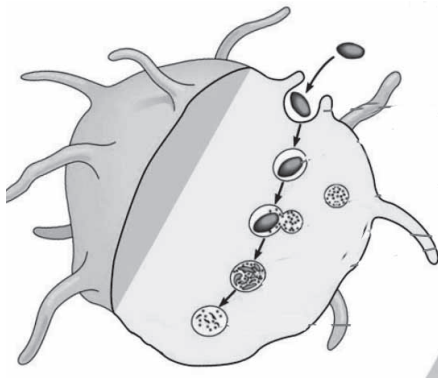
"Blood clotting is a type of defence mechanism"

I. Make a flow chart using the hints given below.

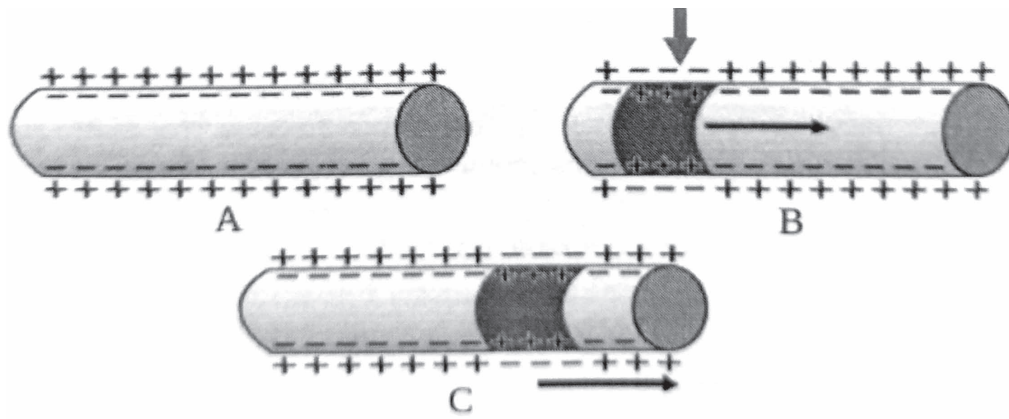
- a) Thromboplastin converts prothrombin into thrombin
- b) Blood flows from the wound
- c) Blood clot forms
- d) Thrombin converts fibrinogen into fibrin fibres.
- e) Tissues and platelets at the side of wound degenerate to form the enzyme called thromboplastin.
- f) Fibrin fibres form a net and RBC and platelets get entangled in the net.

II How does the coagulation become a defence mechanism?

96.



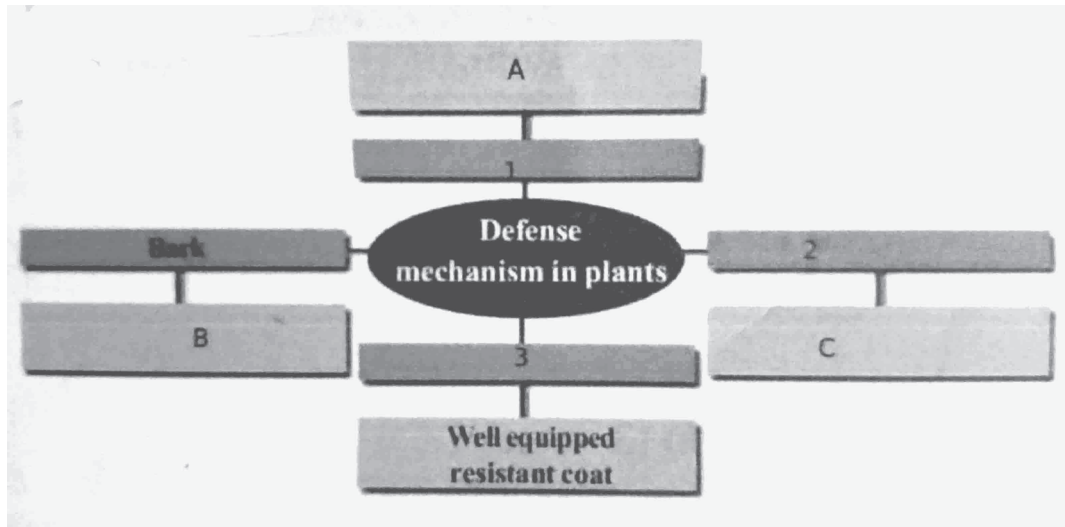
- a) Which is the process indicated in the illustration?
  - b) Which are the white blood cells involved in the process?
  - c) Is it specific defense mechanism? Justify
97. What are antibiotics? Write side effects of antibiotics?
98. a) Name the AIDS virus?  
b) Write the Mode of transmission of AIDS?
99. Analyse the illustration of impulse transmission through axon and answer the following questions?



- a) What are the changes that take place in illustration B when compared to A? Give reason for this change.
- b) Explain how this change brings about the transmission of impulses through axon?
100. Hints about two diseases are given below. Analyse them and answer the questions.
- A Internal bleeding, Severe fever,  
Headache, Muscle pain,  
redness in eye
- B Genetic disease  
Excess blood is lost even through minor wounds.
- a) Identify the disease A and B?
- b) How temporary relief brings in disease B?
- c) Which bacteria causes disease A?
- d) How does the disease A spread in human beings?
101. i) Genes are working by synthesising .....
- ii) Prepare a flow chart of protein synthesis using the given tips?
- a) tRNA brings different kinds of amino acids to ribosome
- b) mRNA reaches out of the nucleus
- c) mRNA forms from DNA
- d) Based on the information in mRNA amino acids are added

- e) mRNA reaches in ribosome
- f) Protein molecules are synthesised

102. Complete the illustration given below by including different defence mechanism in plants?

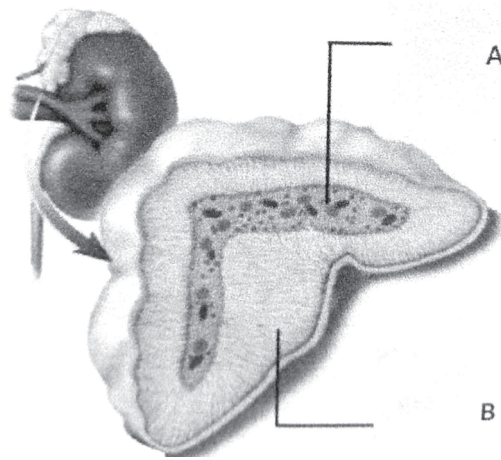


103. Observe the table of blood groups and write the answers?

Blood group	Antigens	Antibodies
A	A	b
B	B	a
AB	A and B	Nil
O	Nil	a and b



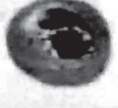

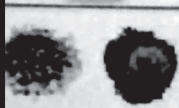
- a) Where the antigens are found?
- b) What are the antigens in the blood group AB?
- c) Where the antibody is found?
- d) What are the antibodies in the blood group O?
- e) What is Rh factor?
- f) Which blood group have antigens A, B and D?

104. Observe the illustration and write the answers?

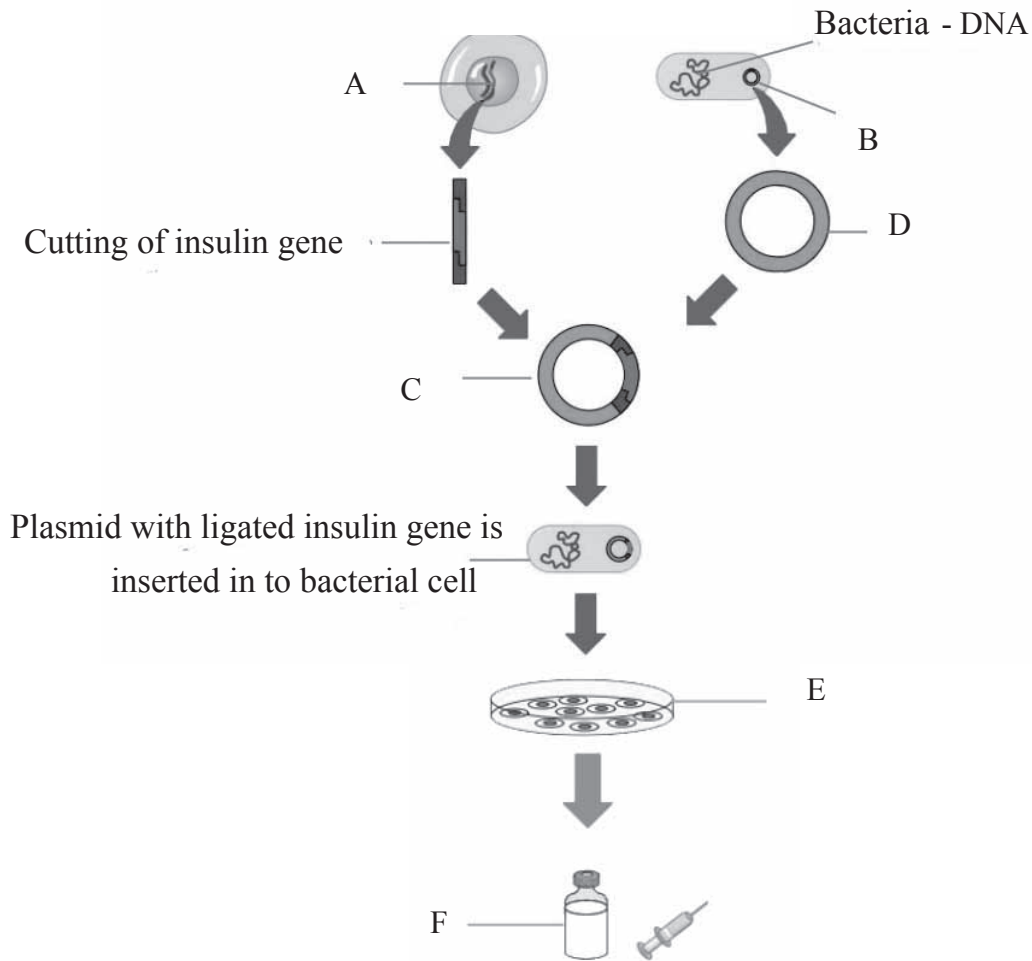


- Name the endocrine gland?
- Identify the parts labelled as A and B?
- Name the hormones synthesised by A?
- Which hormone maintains blood pressure?

105. Complete the table and fill in A, B, C, D and E

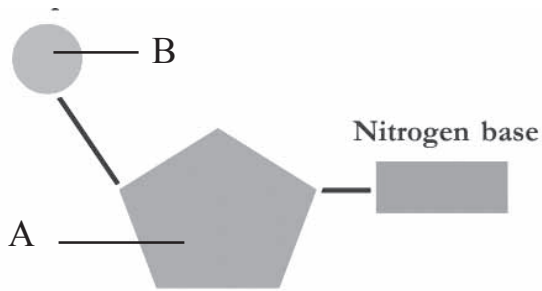
White Blood Cells		Defense Action
	<b>Neutrophil</b>	<b>C</b>
	<b>A</b>	Stimulates other white blood cells. Dilates the blood vessels.
	<b>Eosinophil</b>	Synthesizes chemicals that destroy foreign bodies. Synthesizes chemicals required for the inflammatory responses.
	<b>B</b>	<b>D</b>
	<b>Lymphocyte</b>	<b>E</b>

106. Complete the flow chart.



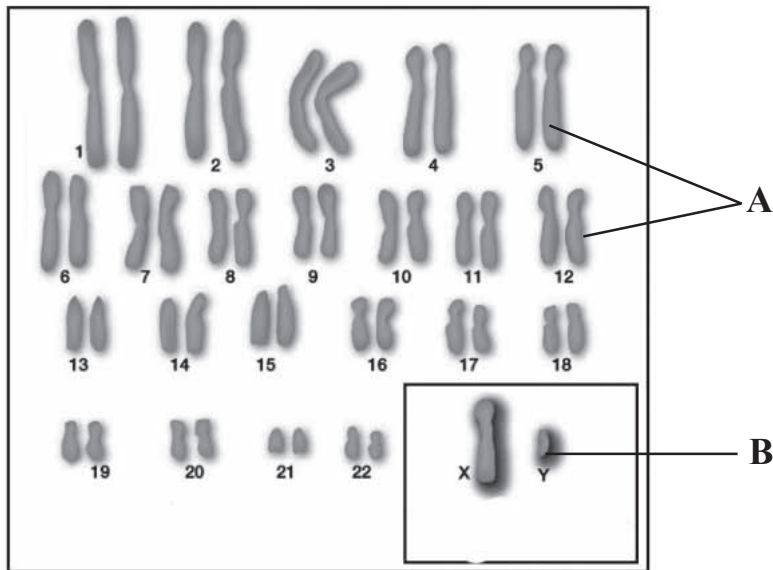
- Write A, B, C, D, E and F.
  - Name the enzymes used to cut and join the genes.
- 107.
- Who put forward a logical scientific theory on evolution?
  - Which peculiarity of the finches attracted Darwin?
  - Explain the reason for variations on the basis of theory of Natural Selection?

108.



- a) Write A and B?
- b) What are the differences between DNA and RNA?

109.



- a) Write A and B?
- b) Which are the sex chromosomes?
- c) Write the genetic make up of  
Male 44 + .....  
Female 44 + .....

110.



- a) Which disease indicates in the figure?
- b) Disease causing bacteria?
- c) Disease affected organs?
- d) Symptoms of disease?

### Questions (5 score)

111.

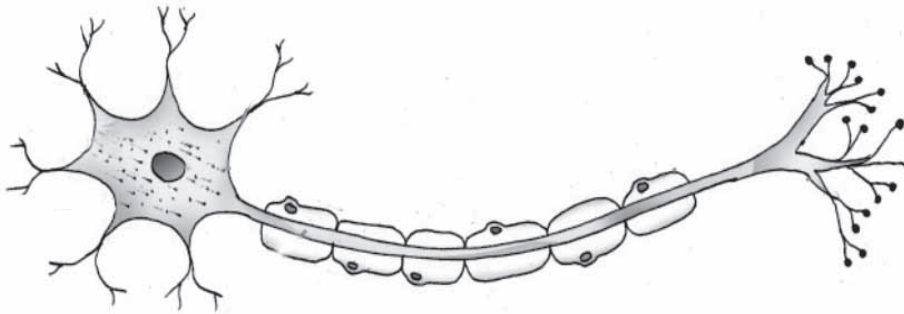


Draw the picture and name the parts according to the given indicators.

- i)
  - a) Evokes sensation
  - b) Controls heart beats.
- ii) State the functions of the below mentioned parts.  
Hypothalamus, Cerebellum.

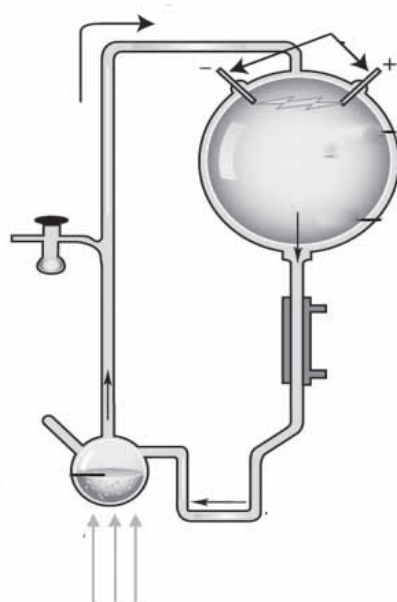
112. Gigantism, Dwarfism, Acromegaly are hormone related disease conditions. Name the hormone. What is the causes of Gigantism? Write the symptom of Dwarfism? Write the causes and symptoms of Acromegaly?

113 Draw the picture and label the parts using the hints given below.



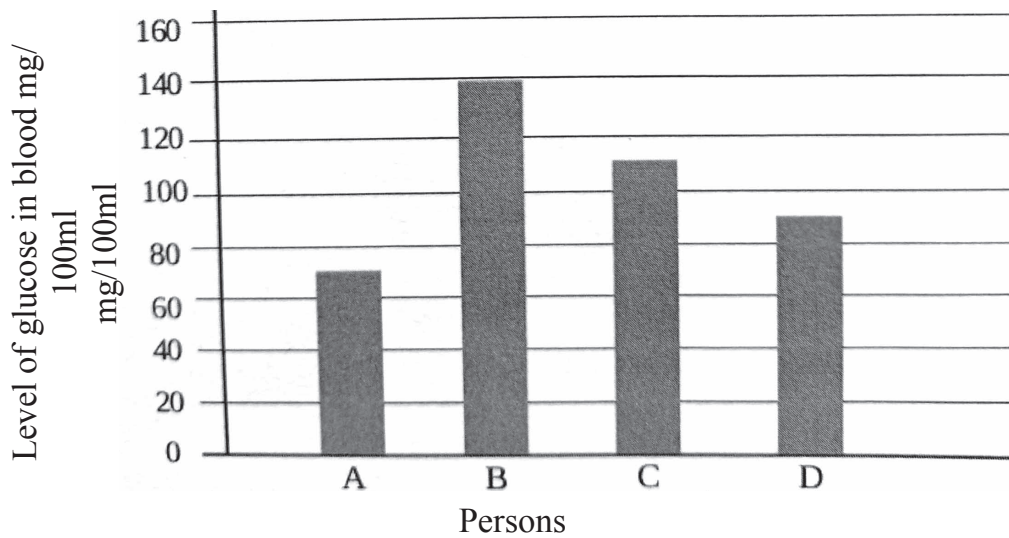
- a) Branches of dendron
- b) Carries the impulse from the cell body to the outside.
- c) Secretes neurotransmitter
- d) Encircles and protects the axon

114. Observe the illustration and answer the questions below.



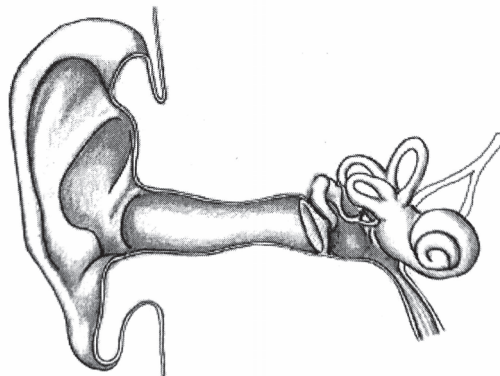
- a) Name the experiment (1)
- b) What are the gases in the flask? (2)
- c) What is the organic molecule formed in this experiment? (1)
- d) Which hypothesis is related to this experiment? (1)

115. Examine the graph indicating the blood glucose level of different Individuals before breakfast.



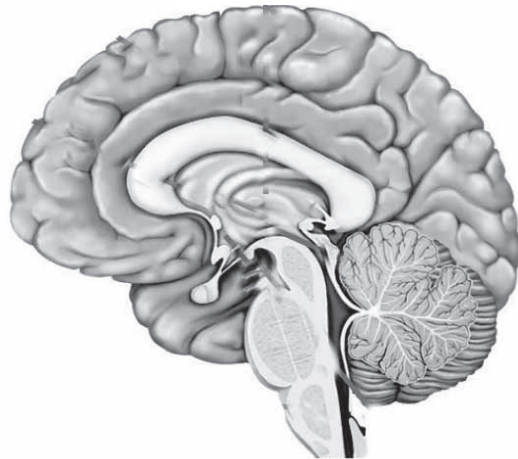
- a) Which individual is affected by diabetes mellitus?
- b) Write two actions of insulin to prevent the rise in the level of glucose in blood.
- c) Why do people having diabetes mellitus experience extreme fatigue?

116. Picture of ear is given below. Draw the picture and mark the parts by analysing the indicators.



- 
- a) Which part receives the vibration from ear drum?
  - b) Which canal connects middle ear and pharynx
  - c) Where is situated sound receptors?
  - d) Through which part sound waves reach to ear drum.

117. Draw the picture and label the parts a, b, c and d?



- a) Cerebrum
- b) Thalamus
- c) Hypothalamus
- d) Medulla oblongata
- e) Write the functions of a, b, c and d

118. Write the answers related to tuberculosis

- a) Disease causing bacteria
- b) Symptoms
- c) Transmission of disease
- d) Treatment
- e) Vaccine

119. Fever is a condition when the body temperature rises above the normal level.

- a) Is fever a disease or symptom of disease?
- b) When the pathogens enter the body, the temperature rises. Why?
- c) Fever is a defense mechanism. Draw a flow chart?

---

120. Draw the picture and label Sclera, yellow spot, optic nerve, retina.  
Write the functions of Sclera and yellow spot?



**EQUIP - DIET KASARAGOD**

**SSLC QUESTION POOL**

**BIOLOGY - ENGLISH MEDIUM**

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**Answer Key**

**1 Mark Questions - Answers**

1. Oval window. others are parts of eye ( $\frac{1}{2}+\frac{1}{2}=1$  score)
2. Virus (1 score)
3. Oligodendrocyte - Spinal cord (1 score)
4. Cytokinin : Others are pheromones ( $\frac{1}{2}+\frac{1}{2}=2$  scores)
5. Interneuron (1 score)
6. Iodopsin / Photopsin (1 score)
7. Nipah (1 score)
8. Fibrin (1 score)
9. Interferons (1 score)
10. Sickle cell Anaemia (1)
11. Self Acquired Characters (1)
12. BCG (1)
13. mRNA (1)
14. Civeton, Bombykol ( $\frac{1}{2}+\frac{1}{2} = 1$ )
15. Restriction Endonuclease (1)
16. Myelin sheeth (1)
17. Ardipithecus ramidus (1)
18. Radial muscles contract in dim light (1)
19. Leptospira (1)
20. Sickle cell anaemia, others are life style diseases (1)

- 
21. Restriction endo nuclease (1)
  22. Cerebellum (1)
  23. Foot and mouth disease (1)
  24. Cancer is caused by the uncontrolled divisions of cells. (1)
  25. Internal stimulus (1)
  26. Pheromones. Others - plant hormones ( $\frac{1}{2}+\frac{1}{2}=1$ )
  27. Hugo devries (1)
  28. Pancreas (1)
  29. Yellow spot (1)
  30. Civeton (1)
  31. Sickle cell anaemia (1)
  32. Neutralise the toxins of the antigens (1)
  33. 2 (1)
  34. Circular muscles contract (1)
  35. A - Pain receptor ( $\frac{1}{2}$ )  
B - Pressure receptor ( $\frac{1}{2}$ )
  36. Fungus (1)
  37. Parathormone (1)
  38. Night blindness is the deficiency disease of Vitamin A(1)
  39. Dopamine : Neuro transmitter (1)
  40. Meninges (1)
  41. Callose prevents germs which crosses the cell wall (1)
  42. Insulin (1)
  43. Increases the heart beats (1)
  44. A = Ring worm ( $\frac{1}{2}$ ), B - Athlete's Foot ( $\frac{1}{2}$ )
  45. Nipah (1)

## 2 Mark Questions - Answers

46. a - Auditory canal b-Oval window c - impulse, d- cerebrum  
( $\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2} = 2$  score)
47. \* They don't have duct to carry the secretion to the cells. Hormone receptor complex (1+1=2 score)
48. \* Diphtheria, Coryne bacterium diphtheriae (1+1=2 score)
49. Alec Jeffreys  
Each person has different arrangement of nucleotides (1+1=2)
50. Shark - Lateral line  
Snake - Jacobson's organ  
Housefly - Ommatidia  
Planaria - Eyespot ( $\frac{1}{2} \times 4 = 2$ )
51. Glaucoma, Laser surgery (1+1=2)
52. a) Aromatic particles dissolve in the mucus and stimulate olfactory receptors.  
b) They have no cone cells to detect that colours due to genetic disorder.  
(2 score)
53. a) The arrangement of nucleotides in the DNA differs in various individuals.  
b) The arrangement of nucleotides among close relatives have many similarities. (2 score)
54. This statement is not correct  
In These organisms external structure of fore limb is different but internal structure is same. (2 score)
55. a) X ( $\frac{1}{2}$ )  
b) X ( $\frac{1}{2}$ )  
c) XX ( $\frac{1}{2}$ )  
d) XY ( $\frac{1}{2}$ )

56. Sudden change in genetic constitution of organisms (1)  
 Defects in the duplication of DNA  
 Radiations  
 Chemicals  
 (any two ( $\frac{1}{2}+\frac{1}{2}$ ))
57. Human genome project  
 Human genome has about 24000 functional genes  
 Major share of human DNA includes junk genes  
 There is only 0.2 percent difference in DNA among humans  
 About 200 genes in human genome are identical to those in bacteria (2)
58. a) B (1)  
 b) Insulin, Glucagon (1)

59.

A	B
1) Ardipithecus ramidus	The most primitive member of the human race
2) Homo habilis	Made weapons from stones and bone pieces
3) Homo erectus	Had the ability to stand erect
4) Homo sapiens	Modern man

( $\frac{1}{2} \times 4 = 2$ )

60. A) Monocyte - Engulfs and destroys germs (1)  
 B) Lymphocyte - Identifies and destroys germs specially (1)

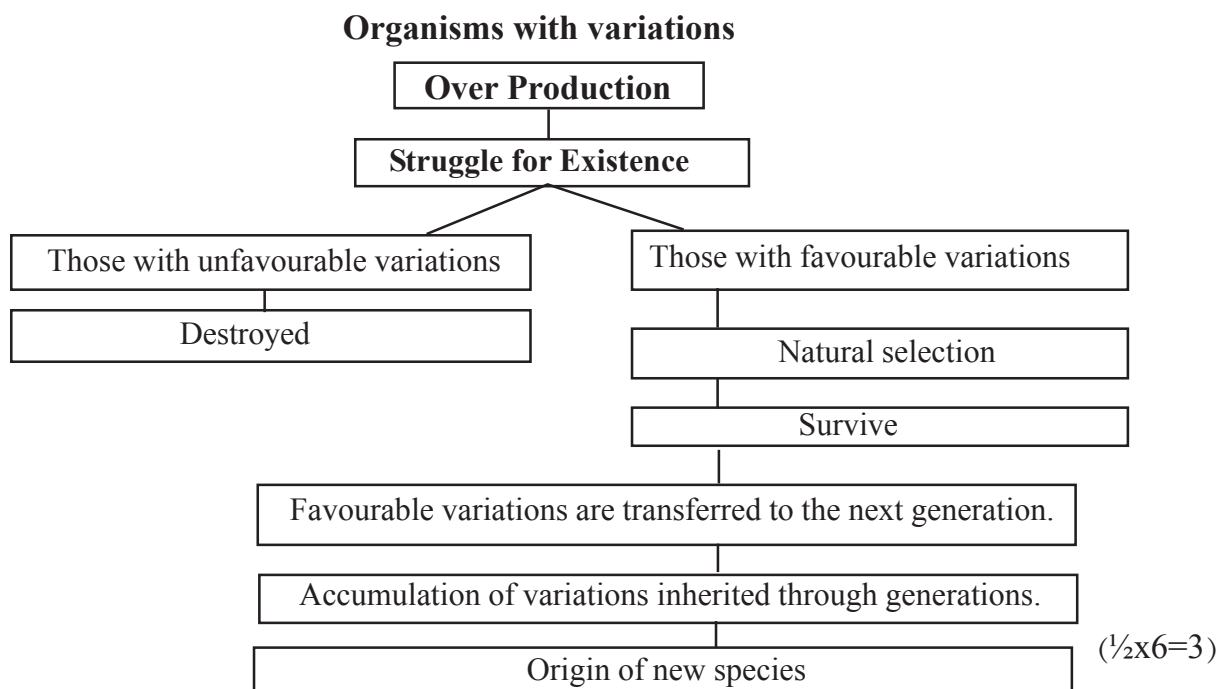
### 3 Mark Questions - Answers

- 61 a) Axon  
b) Synaptics knob  
c) axonite (1+1+1 = 3 score)
62. Night blindness - Loses clear vision in dim light  
Colour blindness -Defects of cone cells  
Xerophthalmia - Cornea becomes opaque
- a) Vitamin A  
b) Red, Green  
c) Retinal ( $\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2} = 3$  score)
63. \* Glucagon - Transforms glycogen into glucose in the Liver.  
Produces glucose from amino acids  
\* Insulin (1+1+1 = 3 score)
64. a) Myco bacterium tuberculosis  
b) BCG  
c) Loss of weight / fatigue/perisistent cough (1+1+1 = 3 scores)
65. \*Cercopethicoidea - monkey  
Hominoidea - Gibbon / Orangutan/Gorilla/Chimpanzee/man  
(1+1+1 = 3 scores)
66. DNA RNA  
Deoxy ribose Ribose  
Adenine, Thymine A,U,G,C  
Guanine, Cytosine  
( $\frac{1}{2} \times 6 = 3$ )

67. a) A - Rod cell ( $\frac{1}{2}$ )  
B - Cone cell ( $\frac{1}{2}$ )  
b) In retina (1)  
c) Rod - helps to see in dim light ( $\frac{1}{2}$ )  
Cone - intense light / help to see different colours ( $\frac{1}{2}$ )
68. a) Lymphocyte (1)  
b) (Cause) (2) mark
69. a) Parkinsons  
b) any one symptom  
c) Epilepsy  
d) (Cause)  
e) Insoluble protein accumulates, neuron get destroyed.  
f) Memory loses ( $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 3$ )
70. a) Haemophilia (1)  
b) (Cause) (1)  
c) Remedy (1)
71. (c); (d); (f); (b); (e); (a) (3 mark)
72. a) Pheromones  
b) \* Attracting mates  
\* Informing availability of food.  
\* determining the path of travel  
\* Informing the dangers.
73. c, d, e, a, d, f ( $\frac{1}{2} \times 6 = 3$  score)
74. Nucleotides(1)  
Phosphate, sugar molecules (1)  
uracil (1)

75. 1. (b) - (iii)  
 2. (c) - (i)  
 3.(a) - (ii) (3 score)
76. The technology of the testing the arrangements of nucleotides is DNA profiling. (1)  
 Just like the difference the finger print of each person, (1)  
 the arrangement of nucleotides in each person also differs.  
 To identify real parents, to find out hereditary characteristics,  
 to identify the real culprit (1)
77. Urey-Miller experiment (1)  
 Methane, ammonia, water vapour (1)  
 Amino acids (1)

78.



79.

	No.of. Strands	Type of Sugar	Nitrogen bases
DNA	2	De-oxy Ribose	Adenine, Thymine Cytosine, Guanine
RNA	1	Ribose	Adenine, Uracil Cytosine, Guanine

( $\frac{1}{2} \times 6 = 3$ )

80.

A	B	C
Planaria	Eye spot	Light
House fly	Ommatidia	Eye
Shark	Lateral Line	Balancing
Snake	Jacobson's organ	Olfactory receptor

81.

- a) Retina
- b) A is rod cell - helps to see in dim light and B is cone cell - helps to see in bright light and to see different colours.
- c) This diversity is due to the difference in amino acids in the opsin molecules. (3)

82.

- a) Pheromone (1)
- b) Attracting mates, informing the availability of food (any two 1 score)  
determining the path of travel, signalling dangers
- c) Muscone, Civetone, Bombykol (any two, 1 score)

83.

- b, d and f are correct

84.

Though antibiotics are effective medicines, their regular use creates many side effects. Some important side effects are listed below:

- \* Regular use develops immunity in pathogens against antibiotics.
- \* Destroys useful bacteria in the body
- \* Reduces the quantity of some vitamins in the body (3 score)

85. Spinal Cord (1)  
Sensory nerves reach the spinal cord through the dorsal route (1 score)  
Cerebro spinal fluid (1)

### 4 Mark Questions - Answers

86. \* Chemical evolution theory  
\*  $H_2$ ,  $N_2$ ,  $CO_2$ , Water Vapour, Methane, Ammonia,  $H_2S$  (any two)  
\* Amino acids, Monosaccharides, Nitrogenbases, Fatty acids (any two)  
\* Thunder and Lighting , UV Rays, Volcanic eruptions (any one)  
(1+1+1+1 = 4 scores)
87. 4 steps (1+1+1+1 = 4 score)
88. \* Penicilin, Alexander Fleming, side effects (any two)  
(1+1+1+1 = 4 scores)
89. Planaria - Eyespot - light  
Snake - Jacobson's organ - smell  
Housefly - Ommatidia - light  
Shark - Lateral line - Balancing (1/2x8 = 4 scores)
90. 4 points (1+1+1+1 = 4 scores)
- 91 a) Phagocytosis (1)  
b) Neutrophil, Monocyte (1/2+1/2)  
c) Steps (2)
92. a) C - Thyroid B - Parathyroid (1/2+1/2=1)  
b) A - Parathormone D - Calcitonin (1/2+1/2= 1)  
c) Explains (2)

93. a) (Causes (1))  
b) Spreading (1)  
c) Treatment (2)
94. a) i) Tall, Red flowered ( $\frac{1}{2}$ )  
ii) ttrr ( $\frac{1}{2}$ )  
iii) tr ( $\frac{1}{2}$ )  
iv) Tall, Red Flowered ( $\frac{1}{2}$ )  
b) Tall, White - TTrr, Ttrr,  
Dwarf, Red - ttRR, ttRr ( $\frac{1}{2} \times 4 = 2$ )
95. I b) Blood flows from the wound  
e) Tissues and platelets at the side of wound degenerate to form the enzyme called thromboplastin.  
a) Thromboplastin converts prothrombin into thrombin  
d) Thrombin converts fibrinogen into fibrin fibres.  
f) Fibrin fibres form a net and RBC and platelets get entangled in the net.  
c) Blood clot forms ( $\frac{1}{2} \times 6 = 3$ )
- II Explanations (1)
96. a) i) Phagocytes reach near the pathogens.  
ii) Engulfs pathogen in the membrane sac  
iii) Lysosome comes near the sac  
iv) The enzyme in the lysosome  
destroys the pathogens. (4 score)
97. Definition of Antibiotics (1)  
Regular use develops immunity in pathogens against antibiotics (1)  
Destroys useful bacteria in the body. (1)  
Reduces the quantity of some vitamins in the body. (1)
98. HIV  
Through sexual contact with HIV infected person

From HIV infected mother to the foetus

By sharing needle and syringe contaminated with HIV components

Through the reception of blood and organs contaminated with HIV. (4 score)

99. a) When stimulated, ionic equilibrium in the particular part changes, and the outer surface of the plasma membrane of axon becomes negatively charged while the inner becomes positive.

b) \* These changes generate impulses

\* The momentary charge difference in the axon stimulates its adjacent parts.

\* Similar changes occur there also

\* Impulses get transmitted through axon (4 score)

100. A - rat fever      B - haemophilia

By injecting the deficient protein.

leptospira

any relevant points      (4 score)

101. i) Protein (1)

ii) c → b → e → a → d → f      ( $\frac{1}{2} \times 6 = 3$ )

102. Bark, Leaf Cuticle, Cell wall,

Callose such four defence mechanism and

their functions ( $\frac{1}{2} \times 8 = 4$ )

103. a) RBC (1)

b) A, B ( $\frac{1}{2} \times \frac{1}{2} = 1$ )

c) Blood plasma (1)




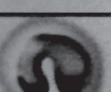

d) a, b ( $\frac{1}{2} + \frac{1}{2} = 1$ )

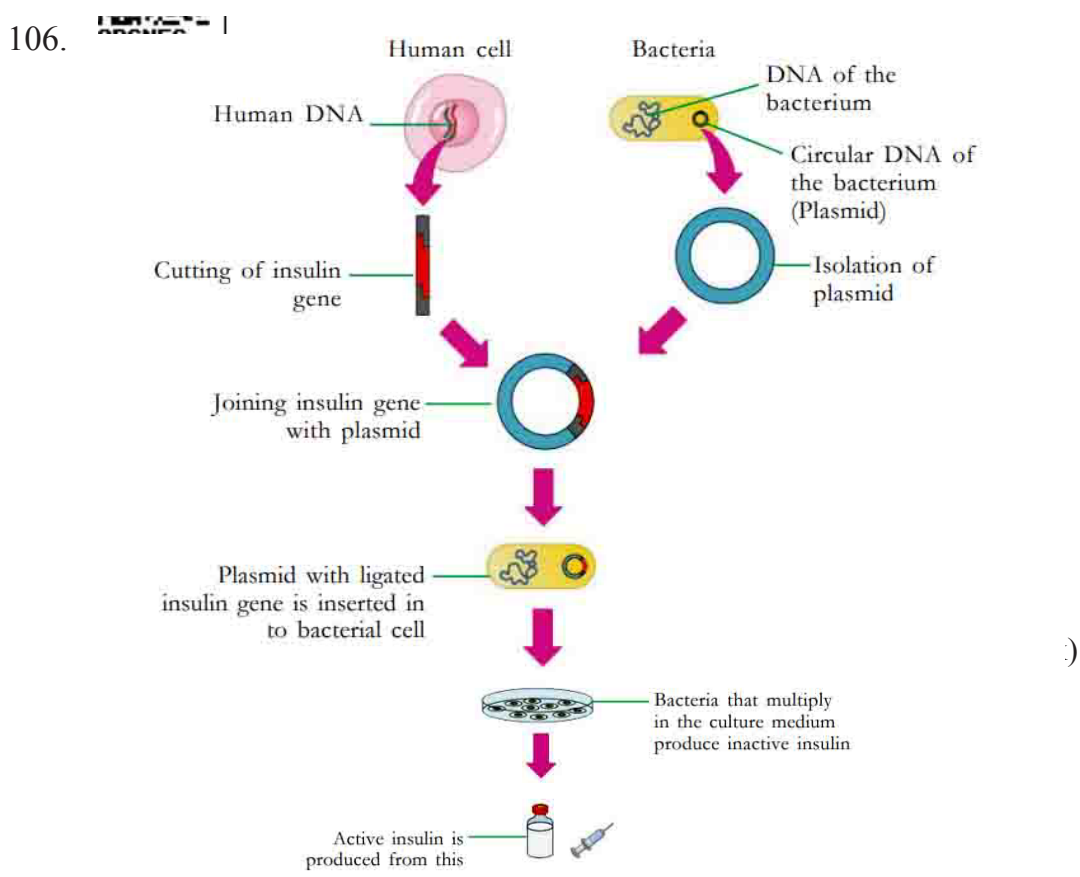
e) Antigen D (1)

f) AB Positive (1)

104. a) Adrenal Gland (1)  
 b) A - Medulla B - Cortex ( $\frac{1}{2}+\frac{1}{2}=1$ )  
 c) Epinephrine, Norepinephrine ( $\frac{1}{2}+\frac{1}{2}=1$ )  
 d) Aldosterone (1)

105.

White Blood Cells		Defense Action
	Neutrophil	Engulfs bacteria, synthesizes chemicals that destroy bacteria
	Basophil	Stimulates other white blood cells, Dilates the blood vessels.
	Eosinophil	Synthesizes chemicals that destroy foreign bodies, Synthesizes chemicals required for the inflammatory responses
	Monocyte	Engulfs and destroys germs
	Lymphocyte	Identifies and destroys germs specifically



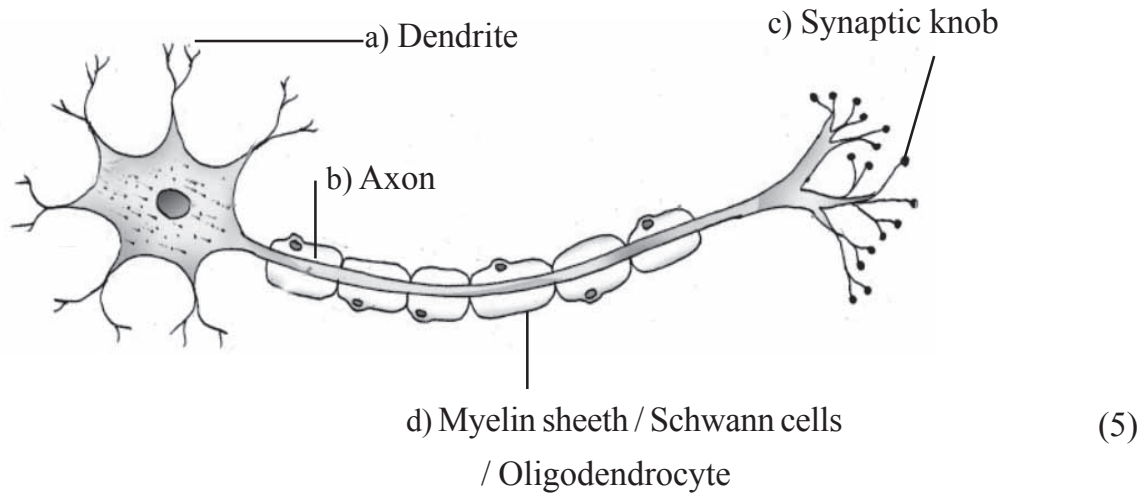
107. a) Charles Robert Darwin (1 mark)  
 b) The beaks of finches (1 mark)  
 c) Variations that are inherited through generations and repeated differently help to form species (1 mark)
108. a) 'A' Sugar molecule, 'B' Phosphate (2 mark)
- |    |               |              |
|----|---------------|--------------|
| b) | DNA           | RNA          |
|    | Two strands   | One strand   |
|    | De-oxy ribose | Ribose       |
|    | Adenine       | Adenine      |
|    | Thymine       | Uracil       |
|    | Guanine       | Guanine      |
|    | Cytosine      | Cytosine (2) |
109. a) A - somatic chromosomes, B - sex chromosomes (1)  
 b) X and Y (1)  
 c) Male 44+XY  
 Female 44+XX (2)
110. a) Diphtheria  
 b) *Corynebacterium diphtheriae*  
 c) Mucus membrane of the nose and throat  
 d) Fever, throat, pain, inflammation in the lymph glands (4 mark)

### 5 Marks Questions - Answers

111. Diagram (1 score)
- i) a - Cerebrum  
 b - Medulla Oblongata
- ii) 1) Hypothalamus Maintains homeostasis  
 2) Cerebellum  
 maintains equilibrium. (5 score2)

112. Hormone - Somatotropin (1)  
 Gigantism - Increase production of somatotropin during the growth phase (1)  
 Dwarfism - Decreased growth, becomes dwarf (1)  
 Acromegaly - Excess production of somatotropin after growth phase (1)  
 Excess growth bones on the face, jaws and fingers (1)

113. Drawing (1)



114. a) Urey - Miller experiment (1)  
 b) Methane, Ammonia, Water vapour (any two) (2)  
 c) Amino Acid (1)  
 d) Chemical evolution theory (1)
115. a) (B)  
 b) \* Enhance the entry of glucose into the cell  
 \* Converts glucose to glycogen in liver and muscles.  
 c) \* Sufficient quantity of glucose is not reaching the cell.  
 Energy production decreases. Excess amount of glucose is eliminated through urine. (5 score)
116. Draw the picture  
 Malleus  
 Eustachian tube

Cochlea

Auditory canal (5 score)

117. Draw the picture (1)

Label the parts ( $\frac{1}{2} \times 4 = 2$ )

Write the functions ( $\frac{1}{2} \times 4 = 2$ )

118. *Pathogen* : Mycobacterium tuberculosis (1)

*Major symptoms* : Loss of body weight, fatigue, persistent cough ( $\frac{1}{2} + \frac{1}{2} = 1$ )

*Transmission of Disease* : When the patient speaks, coughs or sneezes, the pathogens spread into the air and thereby to others. (1)

*Treatment* : By administering antibiotics. (1)

*Vaccine* : BCG (1)

119. a) Symptom of disease.

b) The Presence of toxins produced by the pathogens stimulates the white blood cells.

The Chemical substance produced by the white blood cells raises the body temperature

c) \* Pathogens enter the body

\* The presence of toxins produced by the pathogens stimulates the white blood cells.

\* The chemical substances produced by the white blood cells raises the body temperature

\* The rise in body temperature reduces the rate of multiplication of pathogens. Increases the effect of phagocytosis. (4)

120. Draw the picture

Label the parts

Write functions of sclera and yellow spot (5)





**DISTRICT PANCHAYATH KASARAGOD**



**DIET KASARAGOD**