EQUIP - DIET KASARAGOD

SSLC QUESTION POOL

BIOLOGY - ENGLISH MEDIUM

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 sheeth - Axonite

   Schwann cells - Brain

   Oligodendrocyte - Spinal cord

4. Find out the different one. Write the common characters of others.

   (Muscone, Cytokinin, Civeton, 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)

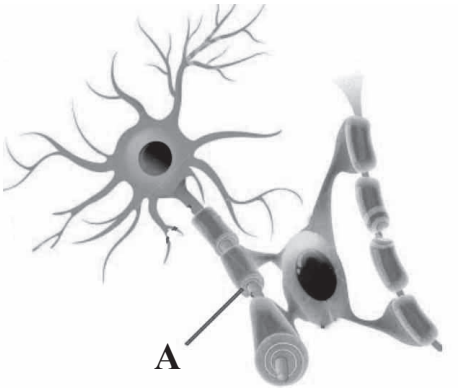
14. List out pheromones from the bracket?

(Cortisol, Civeton, 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?

i) Radial muscles contract in dim light

ii) Pupil contracts in dim light

iii) Circular muscles contract in dim light

iv) 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 - .....

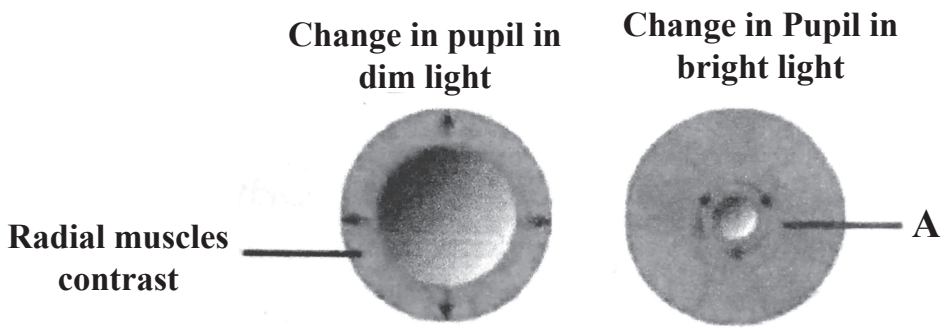
31. The Oxygen carrying capacity of red blood cells decreases. The sickle shaped RBC get collected in the blood vessels and block the blood flow. The symptom says about which disease?

32. Write down the false statements related to the T - lymphocytes?

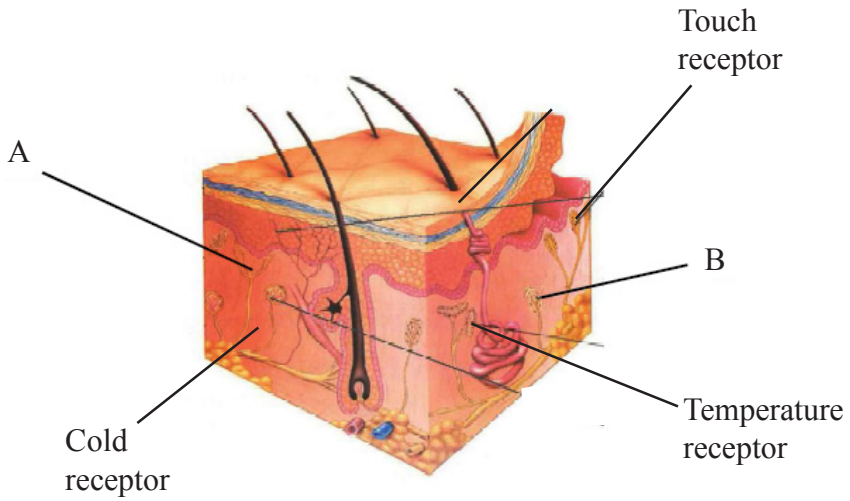
* Neutralise the toxins of the antigens
* Stimulate other defense cells of the body
* Destroy the cells affected by virus
* Destroy cancer cells

33. How many strands are present in the DNA?

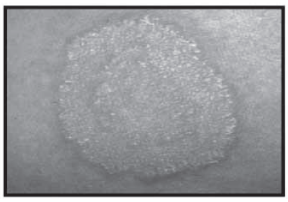
34. Write the change in pupil in bright light?

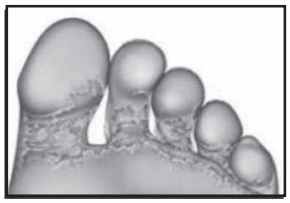


35. Observe the illustration of Receptors in the skin and write A and B?



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 <u>epidermis</u> prevents the entry of germs
* <u>Wax covering</u> prevents the germs which crosses the cell wall.

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

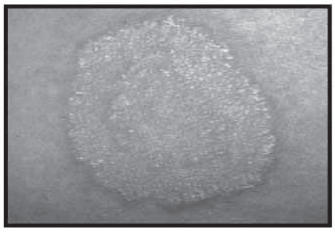
* Auxin
* Ehylene
* Cytokinin
* Insulin

43. Write sympathetic activity

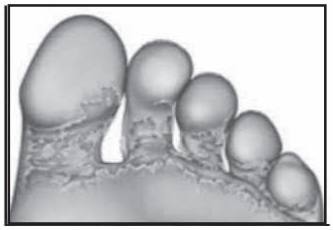
* Increases the heart beats
* Trachea contracts
* The pupil in the eye contracts
* Production of saliva increases

44. Identify and name the following diseases.

A



B



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)..... → Chochlea → 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

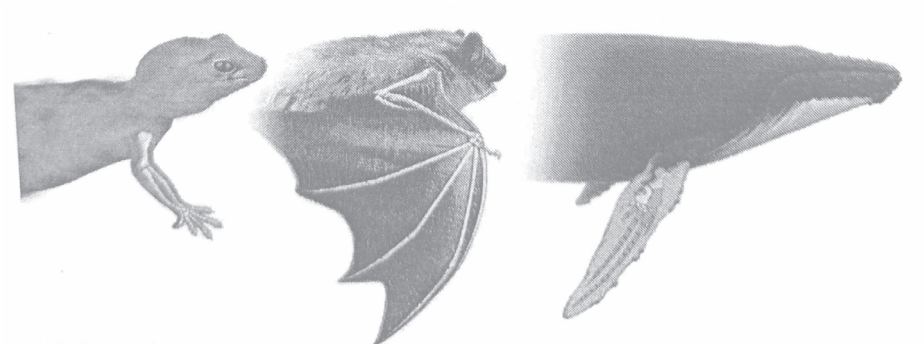
Kollam : About twenty dead bodies of those who lost their lives in the Paravoor firework tragedy were identified through DNA test and handed over to relatives.

Didn't you read the news report?

a) What is the basis of DNA test?

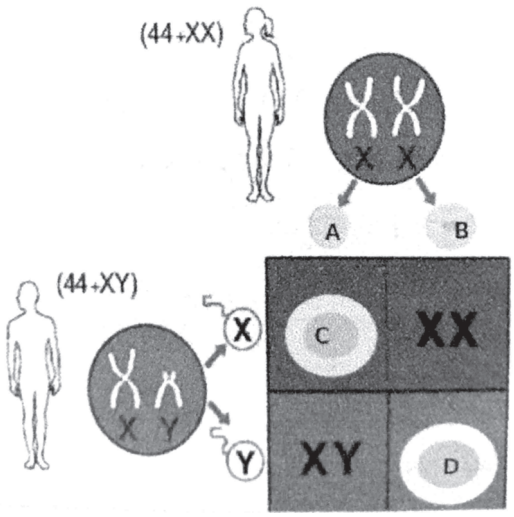
b) How is it possible to identify relations through DNA test?

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?

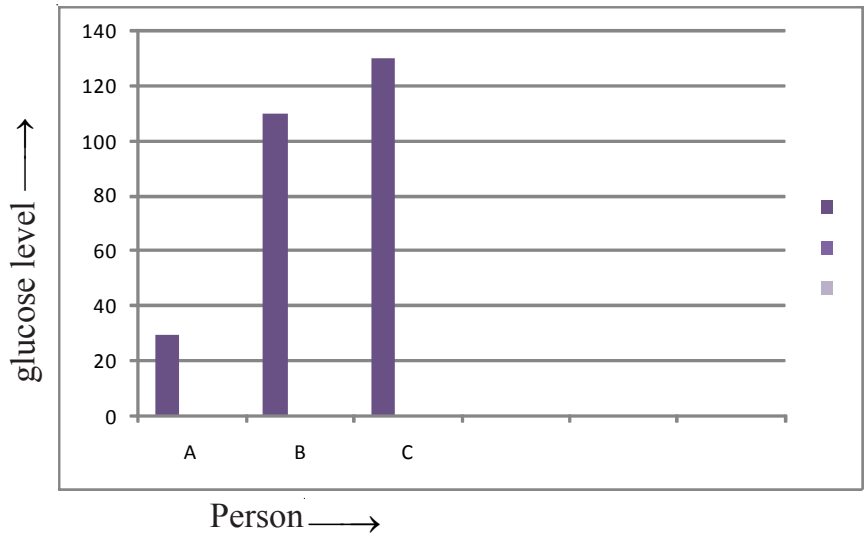
b) What are the causes of mutation?

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?

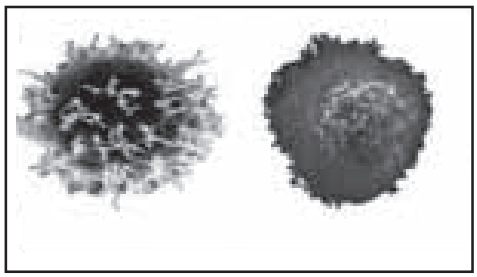
b) Which hormones regulate glucose level in blood?

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

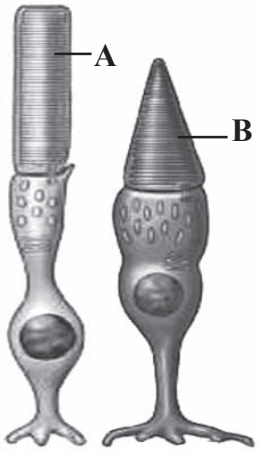
65. What is the relation among Anthropoidea, Cercopithecoidea and hominoidea? Give one example each for cercopithecoidea and hominoidea?

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.

"Exess 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 substance 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 aminoacids to the ribosome

b) mRNA reaches outside the nucleus

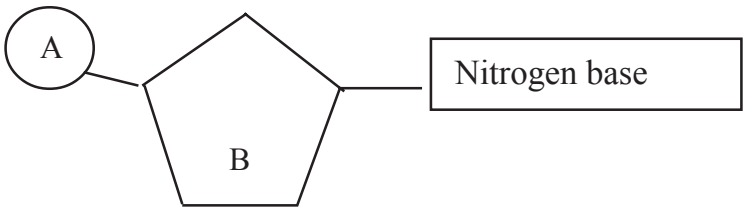
c) mRNA forms from DNA

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.

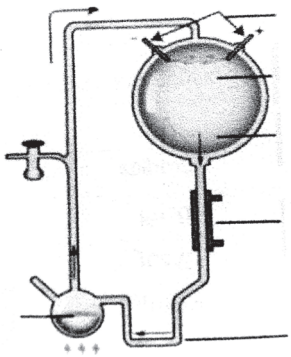
A	B	C
1) Situated above the Kidney	a) Hypothalamus	i) Calcitonin
2) Situated just below the larynx	b) Adrenal gland	ii) Oxytocin
3) Situated in the brain	c) Thyroid	iii) Epinephrine

76. a) What is DNA profiling?

b) What is the basis of DNA testing?

c) What are the uses of DNA testing?

77.

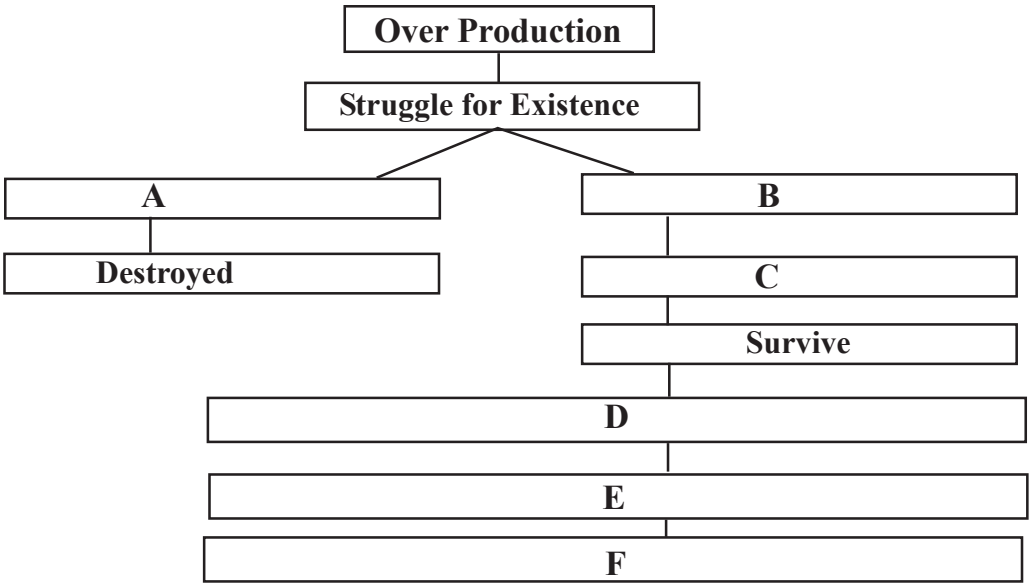


a) Write the name of this experiment?

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

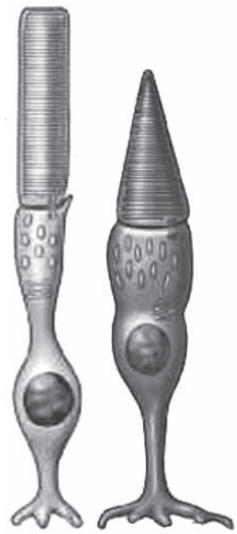
79. Fill in the blanks with suitable words.

	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 **B**

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

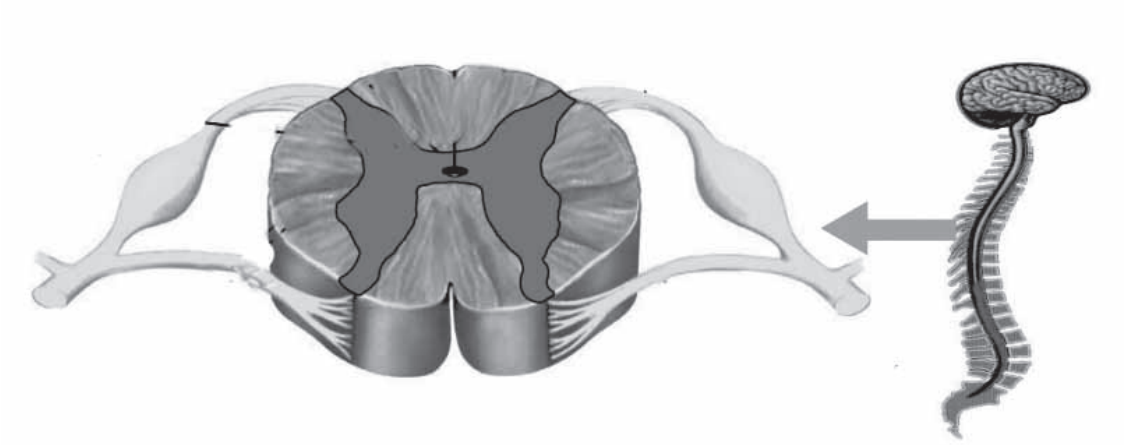
d) Through the reception of blood and organs contaminated with HIV

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?

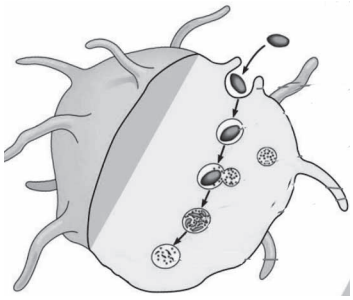
89. Match columns A, B, C by using the words in brackets.

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

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

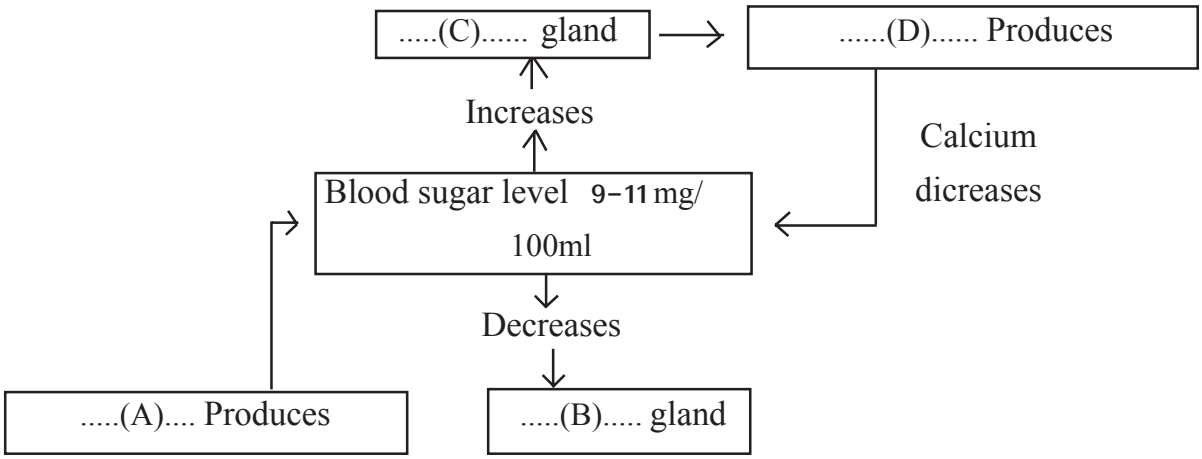
90. The living beings in the modern world are formed due to evolution. It says that all the creatures are formed from a common ancestor. State the evidences given by Biochemistry and Physiology for evolution?

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



a) Which process does picture indicate?
b) Which are the two white blood cells included in this process?
c) Write the steps of this process?

92. Observe the given illustration and answer the questions.



a) Name the glands C and B?

b) Name the hormones A and D?

c) How do the hormones A and D control the level of Calcium in blood?

93. Read the statement and answer the questions.

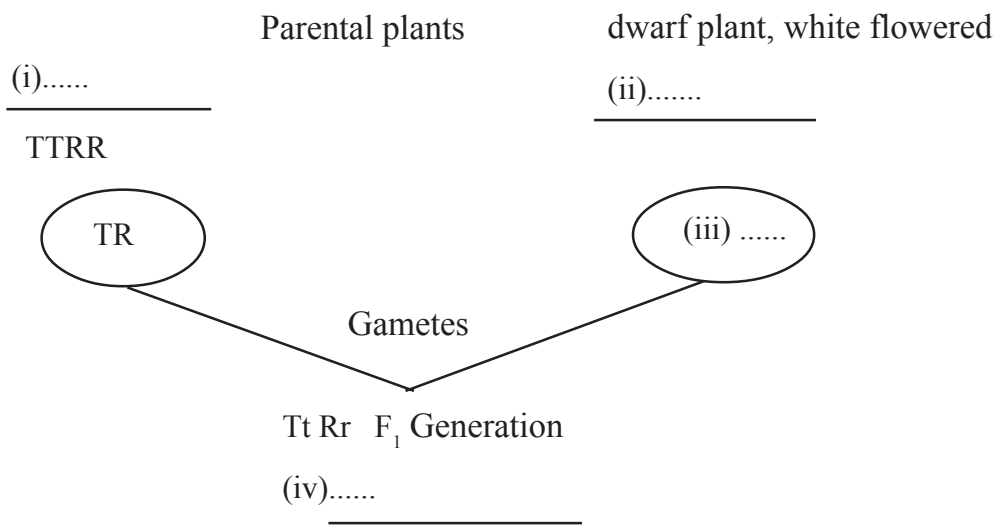
"Excess cell division takes place in cancer"

a) Causes of cancer?

b) How do cancer cells spread to different parts of the body?

c) What are the different treatments of cancer?

94. The hybridization experiment shows the inheritance of two pairs of contrasting traits of the same plant is given below.



a) Write the missed points?

b) Write the alleles of tall white flowered plants and dwarf red flowered plants produced by the self pollination of F_1 generation.

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

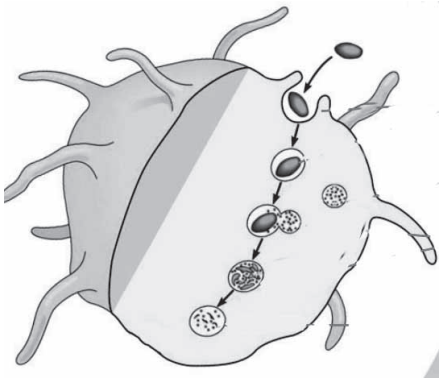
d) Thrombin converts fibrinogen into fibrin fibres.

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?

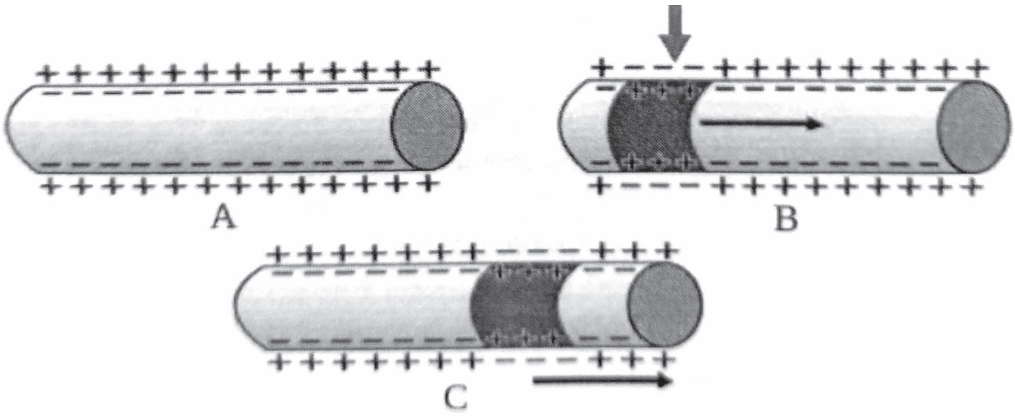
c) Is it specific defense mechanism? Justify

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 impuse 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

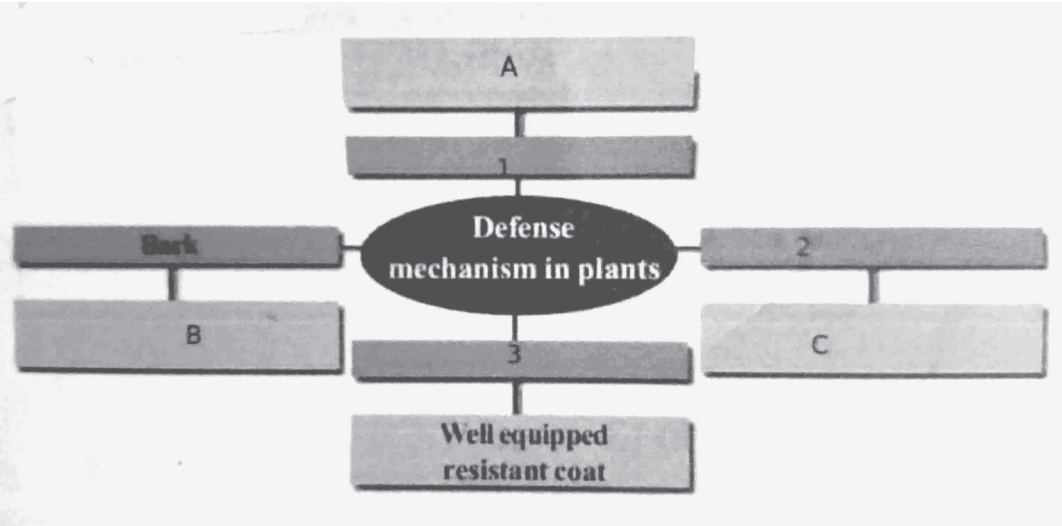
c) mRNA forms from DNA

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?

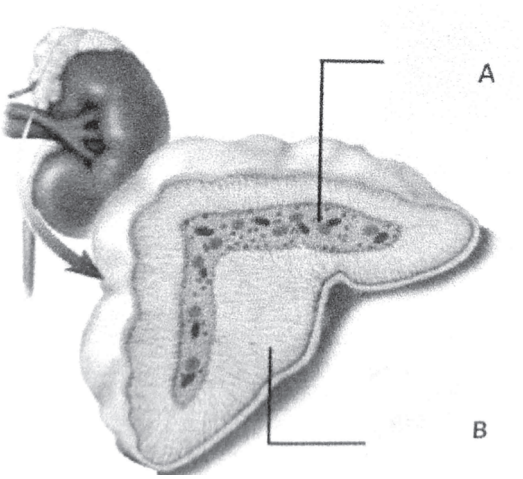
c) Where the antibody is found?

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?



a) Name the endocrine gland?

b) Identify the parts labelled as A and B?

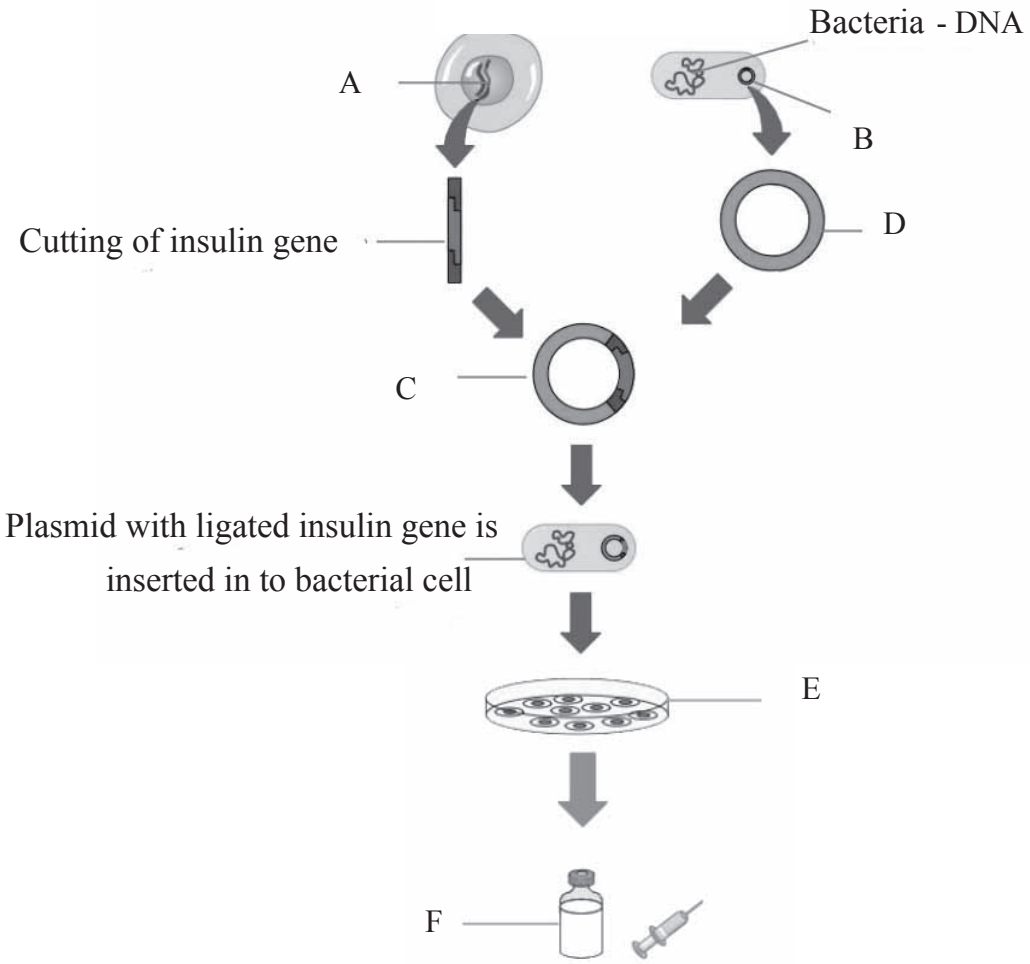
c) Name the hormones synthesised by A?

d) Which hormone maintains blood pressure?

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

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

106. Complete the flow chart.



a) Write A, B, C, D, E and F.

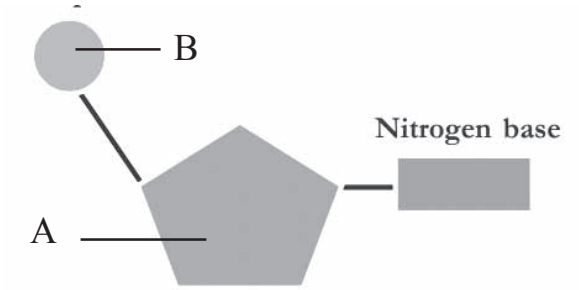
b) Name the enzymes used to cut and join the genes.

107. a) Who put forward a logical scientific theory on evolution?

b) Which peculiarity of the finches attracted Drawin?

c) Explain the reason for variations on the basis of theory of Natural Selection?

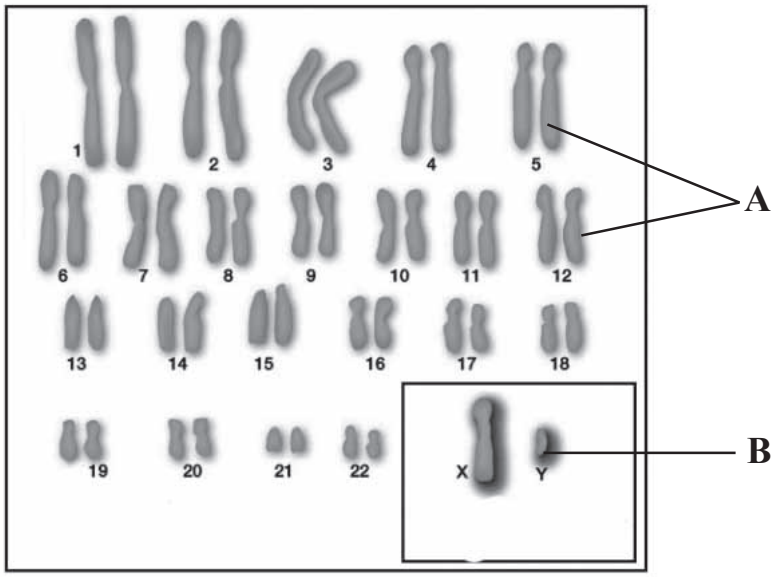
108.



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?

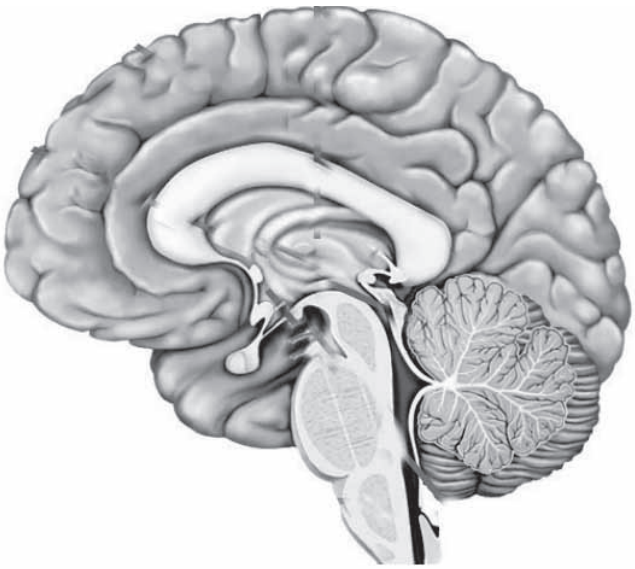
b) Disease causing bacteria?

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

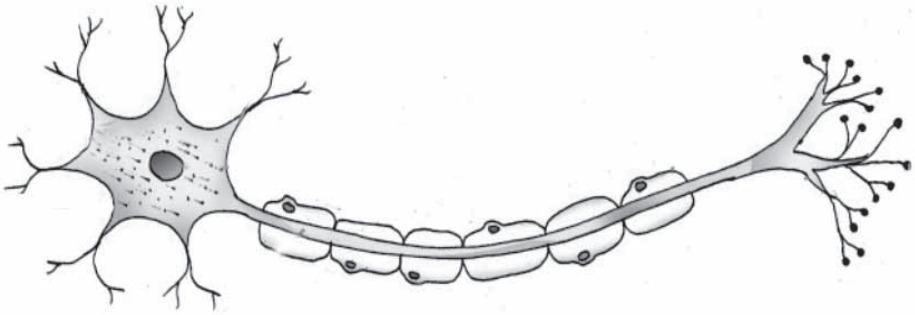
b) Controls heart beats.

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.



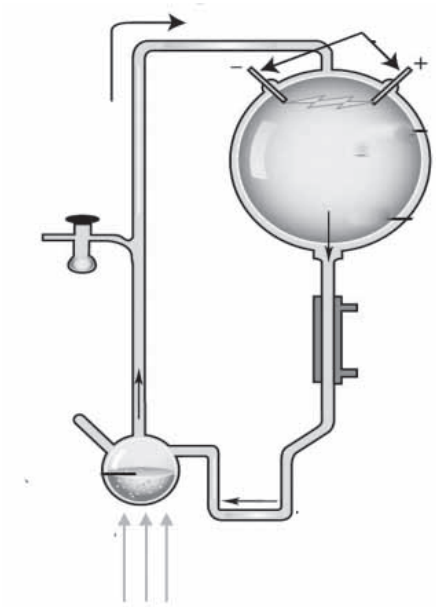
a) Branches of dendron

b) Carries the impulse from the cell body to the outside.

c) Secrets neurotransmitter

d) Encircles and protects the axon

114. Observe the illustration and answer the questions below.



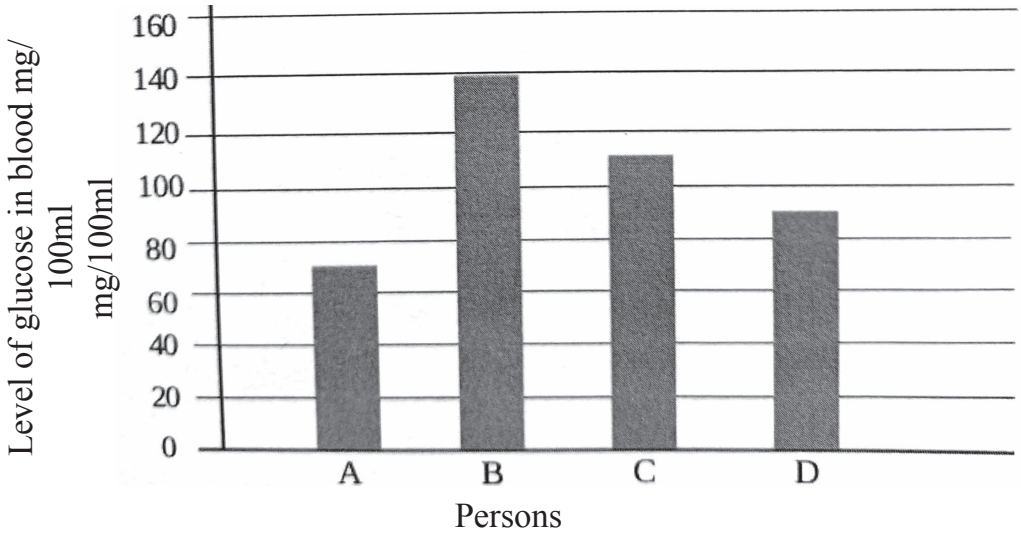
a) Name the experiment (1)

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.

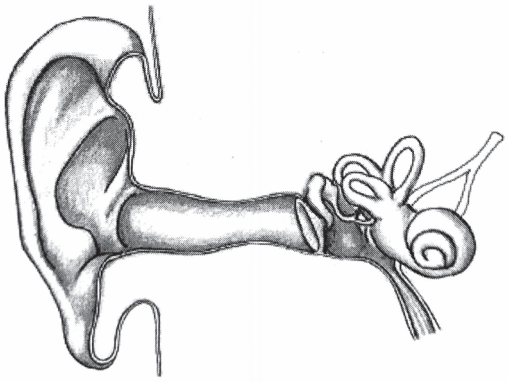


a) Which individual is affected by diabetes mellitus?

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

Answer Key

1 Mark Questions - Answers

1. Oval window. others are parts of eye (½+½=1 score)
2. Virus (1 score)
3. Oligodendrocyte - Spinal cord (1 score)
4. Cytokinin : Others are pheromones (½+½=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 (½+½ = 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. Ohers - plant hormones (½+½=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 (½)
    B - Pressure receptor (½)
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 (½), B - Athlete's Foot (½)
45. Nipah (1)

2 Mark Questions - Answers

46. a - Auditory canal b-Oval window c - impulse, d- cerebrum

(½+½+½+½ = 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 (½x4 = 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 (½)

b) X (½)

c) XX (½)

d) XY (½)

56. Sudden change in genetic constitution of organisms (1)

Defects in the duplication of DNA

Radiations

Chemicals

(any two (½+½)

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

(½x4=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 (½+½+½+½+½+½ = 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	

(½x6=3)

67. a) A - Rod cell (½)

B - Cone cell (½)

b) In retina (1)

c) Rod - helps to see in dim light (½)

Cone - intense light / help to see different colours (½)

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 (½+½+½+½+½+½ = 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 (½x6=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,

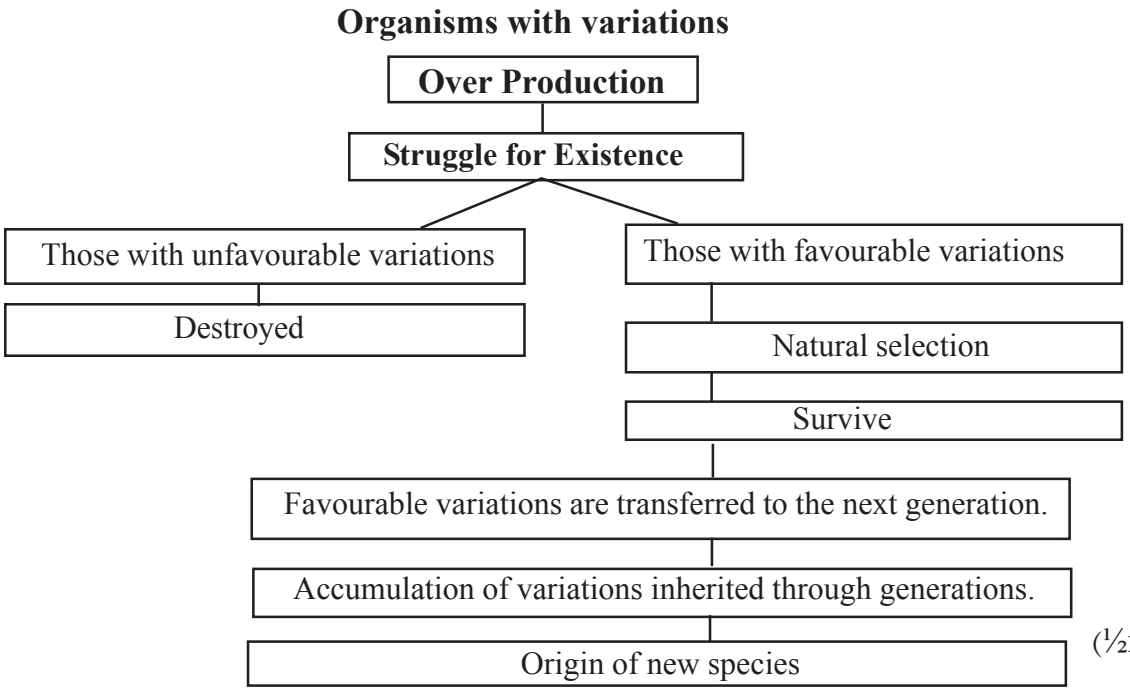
to identify the real culprit (1)

77. Urey-Miller experiment (1)

Methane, ammonia, water vapour (1)

Amino acids (1)

78.



(½x6=3)

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

(½x6=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 avalability of food (any two 1 score)

determining the path of travel, signalling dangers

c) Muscone, Civeton, 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 (½x8 = 4 scores)

90. 4 points (1+1+1+1 = 4 scores)

91 a) Phagocytosis (1)

b) Neutrophil, Monocyte (½+½)

c) Steps (2)

92. a) C - Thyroid B - Parathyroid (½+½=1)

b) A - Parathormone D - Calcitonin (½+½= 1)

c) Explains (2)

93. a) (Causes (1)

b) Spreading (1)

c) Treatment (2)

94. a) i) Tall, Red flowered (½)

ii) ttrr (½)

iii) tr (½)

iv) Tall, Red Flowered (½)

b) Tall, White - TTrr, Ttrr,

Dwarf, Red - ttRR, ttRr (½x4=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 (½x6=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 defficient protein.

leptospira

any relevant points (4 score)

101. i) Protein (1)

ii) c $\longrightarrow$ b $\longrightarrow$ e $\longrightarrow$ a $\longrightarrow$ d $\longrightarrow$ f (½x6=3)

102. Bark, Leaf Cuticle, Cell wall,
Callose such four defence mechanism and
their functions (½x8=4)

103. a) RBC (1)

b) A, B (½x½ = 1)

c) Blood plasma (1)

d) a, b (½+½=1)

e) Antigen D (1)

f) AB Positive (1)

104. a) Adrenal Gland (1)

b) A - Medulla B - Cortex (½+½=1)

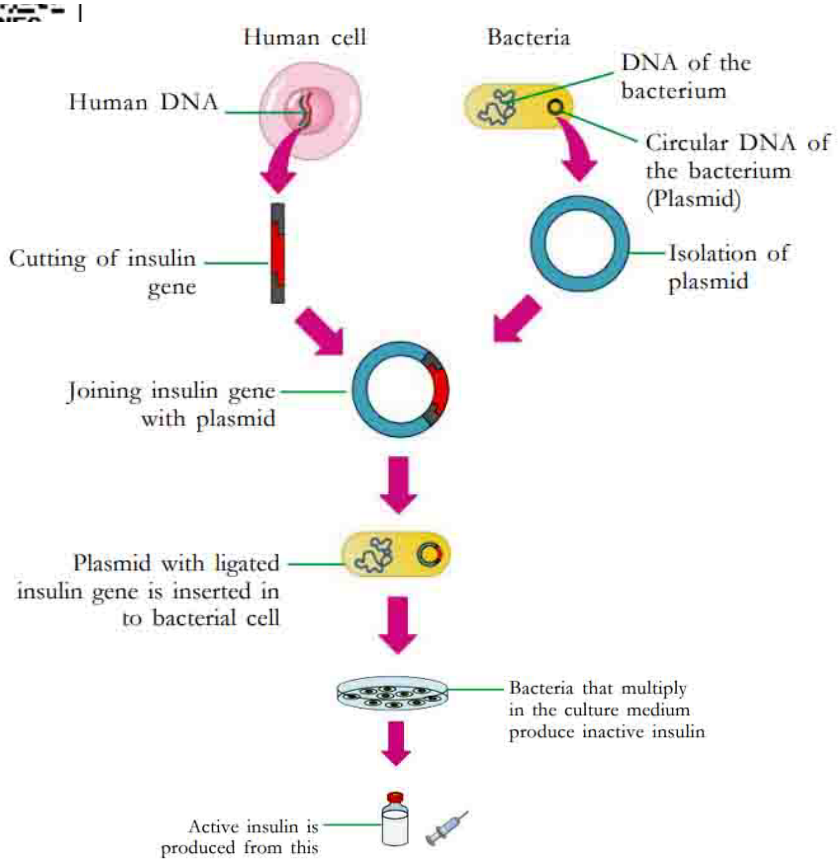
c) Epinephrine, Norepinephrine (½+½=1)

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 cheicals required for the inflammatory responses
	Monocyte	Engulfs and destroys gerns
	Lymphocyte	Identifies and destroys germs specifically

106.



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) Corynebacteriuim 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 - Madulla Oblongata

ii) 1) Hypothalamus Maintains homeostasis

2) Cerebellum

maintains equilibrium. (5 score2)

112. Hormone - Somatotropin (1)

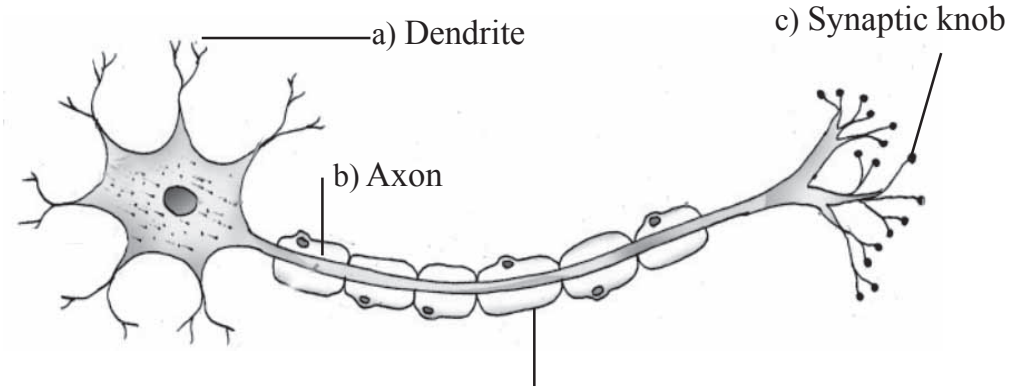
Gigantism - Increase production of somatotropin during the growth phase (1)

Dwarfism - Decreased growth, becomes dwarf (1)

Acromegaly - Excess production of somatotropin after growth phase (1)

Exess growth bones on the face, jaws and fingers (1)

113. Drawing (1)



d) Myelin sheeth / Schwann cells / Oligodendrocyte (5)

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

Auditary canal (5 score)

117. Draw the picture (1)

Label the parts (½x4=2)

Write the functions (½x4=2)

118. *Pathogen :* Mycobacterium tuberculosis (1)

Major symptoms : Loss of body weight, fatigue, persistent cough (½+½=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 termperature

* 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)

◆◆◆