SSLC MODEL EVALUATION 2021

BIOLOGY

Time : 1½ hr
Score: 40

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Instructions:

- First 20 minutes is for reading questions. This time can be utilized for reading the questions and planning the answers.
- Read the instructions related to each question and answer the questions.
- While writing the answers , consider the time and score.
- For questions 1 to 36, a maximum of 40 score will be awarded.

Questions from 1 to 10, each question carries 1 score. [1x10=10**]**

1. Analyse the relationships and fill in the blanks :

Islets of Langerhans : α cells : Glucagon;

Islets of Langerhans : β cells : ---------- ?

2. Which of the following is in right order ?

a). Dissolve particles in saliva – brain – chemoreceptors – nerve.
b). Dissolve particles in mucus – olfactory receptors – nerve – cerebrum.
c). Oval window – nerve – ear oscicles – auditory receptors in cochlea – brain.

3. Which one is not related to ribonucleic acid ?
(Guanine, Thymine, Uracil, Cytosine)

4. Choose the right pair from the items given below :
Charles Darwin - Panspermia, Gregor Mendel - DNA test,
Alexander Fleming – Vaccination, James Watson – Model of DNA.

5. Find out the odd one :
[Dwarfism, Cretinism, Gigantism, Acromegaly]

6. 44 somatic chromosomes + XX in female,
44 somatic chromosomes + ---- in male.

7. Replace the underlined part with right word :
<u>Cytokinin</u> is the plant hormone in gaseous form.

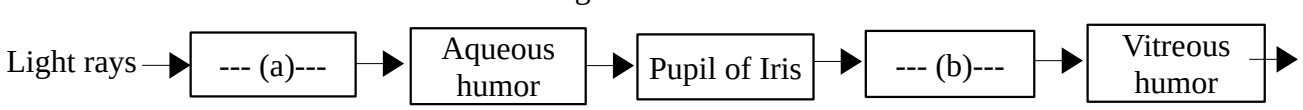
8. Identify and name the figure :

9. Name the functional part of brain that coordinates muscular actions.

10. Plasmid is used as a -----
(vector, hormone, genetic glue, genetic scissor)

Questions from 11 to 22, each question carries 2 score. [2x12=24**]**

11. Find out the **a** and **b** the flow chart of sensing vision :



12. Any mild injury to the medulla oblongata may lead to sudden death. Give reason.

13. Differentiate between:

Haemophilia and Cancer.

14. Due to certain side-effects, antibiotics should not be used without the recommendation of a doctor. Mention any two side-effects.

15. [Basophil, Eosinophil, Neutrophil, Lymphocyte]. Of these,

a). Which one engulfs and destroy germs ?
b). Which one produces antibody against germs ?

16. Find out the missing parts :

	Disorder	**Deficiency of**
Poor vision in dim light	a). ----	b). ----

17. What, according to Oparin and Haldane, might be the sources of energy for the evolution of substances in the primitive earth ?

18. Make suitable pairs from the list [Model: Fungus-Ringworm]

Diphtheria, Malaria, Bacteria, Fungus, Virus, Ringworm, Protozoa, Nipah

19. Mention the symptom or speciality of the following diseases :

a). Diabetes mellitus.
b). Parkinsons.

20. *DNA finger printing or DNA test is useful to identify persons and to prove crimes*.

a). What is the basic principle behind this technology ?
b). Who developed this ?

21. a). Arrange the following stages of a process in right order,
b). Suggest an apt name for this process.

- The enzyme in the lysosome destroys the pathogen.
- Engulfs the pathogen in the membrane sac.
- Expels the remnants.
- Membrane sac combines with lysosome.

22. *Normal rate of calcium in blood is 9-11mg/100ml*.

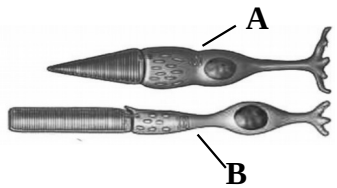
a). Name the hormones which maintain this rate.
b). Name the endocrine gland from which the above hormones are produced.

Questions from 23 to 32, each question carries 3 score. [3x10=30**]**

23. **Musk, Civeton, Bombycol**.

a). What is the common name of the given substances ?
b). Mention any two uses of these substances.

24. Two types of modified neurons are seen in the figure.



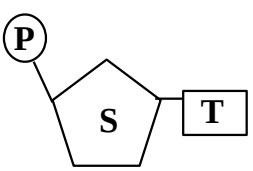
a). Identify and name A and B.
b). Where this can be seen ?
c). How A is different from B in its function ?

25.
- Struggle for existence.
- Origin of new species.
- Natural selection.
- Over production.
- Favourable variants survive.

a). Arrange these in right order. Name the theory of evolution indicated here.
b). Who explained this theory ?

26. On the basis of carrying impulses, nerve is classified in to three categories. What are they ?

27. a). Name the illustration seen here.
b). What are indicated by the P, S and T ?
c). Name the complementary part that pair with this.



28. Find out the reason:

a). Struggle for existence when over production occur.
b). Cerebral cortex is seen as grey in appearance.
c). The size of pupil is adjusted according to the intensity of light.

29. [Rat fever, Diphtheria, Tuberculosis, AIDS]

a). Which of these shows decreased number of lymphocytes ?
b). Choose the one that affects the lymph nodes.
c). The disease that can be prevented through BCG injection ?

30. Suitably arrange the items of columns B and C with that of column A :

A	B	C
a). Sebum b). Pentavalent c). Penicillin	-Mucus -Antibiotic -Skin -Vaccine	-Tetanus -Prevents germs -Immunization -Antibody

31. *Fever is not a disease, but a defense mechanism of the body.*

a). How does fever occur ?
b). How is fever act as one of the strategies of defense ?

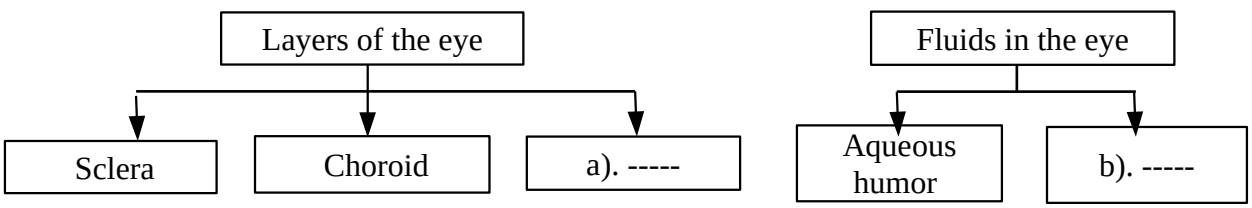
32. Given below is a few stages of a process through genetic engineering:

- From human DNA, cut the gene responsible for the production of insulin.
- The circular DNA is isolated from a bacterium.
- Human insulin gene is ligated with the isolated bacterial DNA.
- Insert this ligated DNA in to another bacterial cell.

a). What is genetic engineering ?
b). Define the genetic scissors and genetic glues with one example each.

Questions from 33 to 36, each question carries 4 score. [4x4=16**]**

33. Complete the chart showing the structure of human eye :



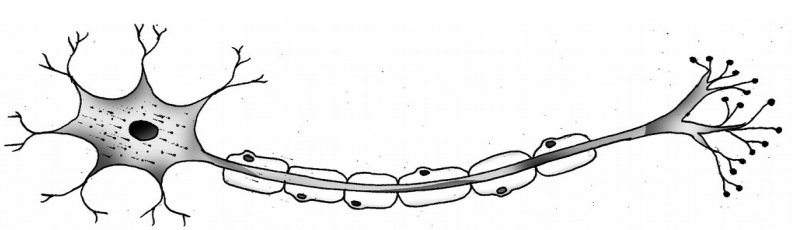
34. Make a table that shows the four types of blood groups, containing antigens and the possible antibodies in persons having each group.

35. a). Complete the stages of protein synthesis of genes in the DNA.

- mRNA carrying messages, forms from DNA.
- mRNA reaches outside the nucleus.
- ----------
- ----------
- ----------

b). Name any other type of RNA that is involved this process.

36. Redraw the given figure in large size. Find out the name of following parts and label them correctly.



a)- Part, which secretes neurotransmitter to the synaptic cleft.
b)- Part, that carry impulses to the cell body.
c)- The protective envelop of axon.