

# SSLC MODEL EXAMINATION FEBRUARY- 2019

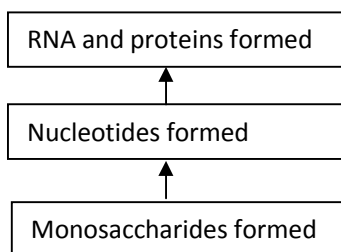
Time: 1<sup>1/2</sup> Hour

## BIOLOGY

Total score: 40

1. SARS & AIDS (1/2 +1/2)
- 2.
- (c) The contraction and relaxation of iris muscles (1)
- 3.
- (b) Cranial nerves – Spinal nerves (1)
4. A: Tropic Hormones/Releasing hormones (1/2)  
B: Oestrogen / Progesterone (1/2)
- 5.
- (d) X-Phosphate, Y- deoxyribose sugar, Z-adenine (1)

6.



7.

- (a) A: Prothrombin B: Fibrin
- (b) Wounds cause loss of blood. Tissues degenerate to form the enzyme called thromboplastin.
- (c) Blood clot is formed by the entangling of platelets and red blood cells in the fibrin network.

8.

- (a) Disease : Ringworm Pathogen: Fungus
- (b) Disease : Filariasis Pathogen: Filarial worms

9.

Part	Function
• Myelin	• Electric insulator
• Synapse	• Regulation of the speed and direction of impulses

10.

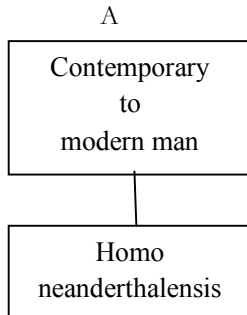
- (a) Pathogen enter the body and produce toxins as a result of metabolism, in the presence of toxin white blood cells stimulated and chemical substance produced, in the presence of chemical substance rises the body temperature.
- (b) The rise in body temperature reduces the rate of multiplication of pathogens and increases the effect of phagocytosis.

11.

- (a) Ligase is an enzyme which is used for joining human insulin gene and plasmid(bacterial DNA)
- (b)
  - Inserting DNA in the bacterial cell by using vectors
  - Providing a favourable medium for the multiplication of bacteria
  - Bacteria produce inactive form of insulin.
  - Producing active insulin from this.

12.

(a)



(b)

- Highly developed brain
- Communication by using language.
- Ability to stand erect and walk on two legs. (Bipedal erect posture)
- Bifocal vision that helps to look at an object.
- Organized life
- Made tools and handled it
- Rational thinking. (any two)

(c) The interference of human beings become a threat to the survival of other organisms

- Human interference has led to loss of habitats of many organisms. This results in the extinction of species. Extinction of some species will lead to extinction of other species also. It is the relationship between species that help biosphere to exist. Absence of existing species will disrupt the delicate balance in nature, leading to total destruction
- The hunting of animals for skin, horn etc. will cause decrease their number.
- Destruction of biodiversity leads to climatic changes and in the extinction of organisms.
- Human create artificial variations through hybridization and genetic engineering

13.

(a) genetic engineering (Gene therapy/ gene mapping)

(b) Before the invention of Human genome project we couldn't control genetic diseases.

We can cure genetic diseases by removing disease causing genes from the genome and inserting normal functional genes. It helps us to overcome the problem associated with genetic disorders. Hence gene therapy is hope for hereditary diseases patients. The technology gene mapping helped to identify the exact gene and its location which is, responsible for particular disease.

14.

(a) A- Semi circular canals- Cluster of receptors in the form of hairs cells seen inside the semi circular canal help in the balancing of body

B: Vestibular nerves: impulses are transmitted by the vestibular nerves to the cerebellum.

(b)

C: auditory nerve : impulses reach the cerebrum through the auditory nerve and we recognize the sound.

D- Cochlea- Cluster of receptors in the form of hairs cells seen inside the Cochlea help in the hearing

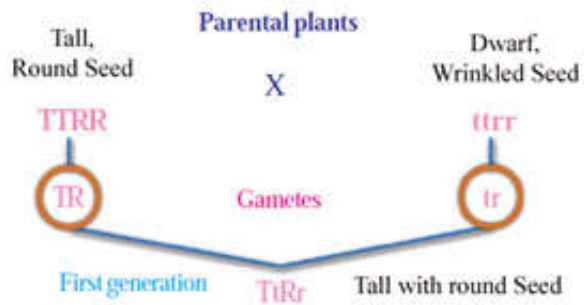
15.

(a) A:  $\textcircled{T}$

B:  $\textcircled{t}$

C: Tt

(b)



16.

- Enzymes control chemical reactions in man and bacteria.
- Energy is stored in ATP molecules.
- Genes determine hereditary traits.
- Carbohydrates, proteins and fats are the basic substances. (any three)  
All these give clear evidence that there was a common ancestor for all living things.

17.

- ‘Observe “dry day’
- Do not dump waste in our surroundings
- Do not allow stagnant water bodies in our surrounding.
- Avoid the situation of multiplication of pathogen.
- Keep our surroundings clean. (any three)

18.

	(a) Goitre	
	(b) Diabetes insipidus	(c) Excess loss of water through urine
(d) Insulin	(e) Diabetes melites	
(f) Thyroxine		

19.

- (a) Geneaction /protien synthesis
- (b) mRNA is the molecule carries information from DNA to ribosomes and controls protein synthesis.
- (c) tRNA (Transfer RNA) : It helps to carry amino acids to the ribosome

20.

- (a) A=T lymphocyte    B= B-lymphocyte
- (b) T-lymphocyte-stimulate other defense cells of the body  
T lymphocytes are capable of destroying cells affected by virus. (Any one)  
B-lymphocyte- produce Antibody against Antigen.  
Destroy the bacteria by disintegrating their cell membrane.  
Destroy the pathogens by stimulating other white blood cells.
- (c) Lymphocytes become activated in the presence of certain particular types of antigens

21.

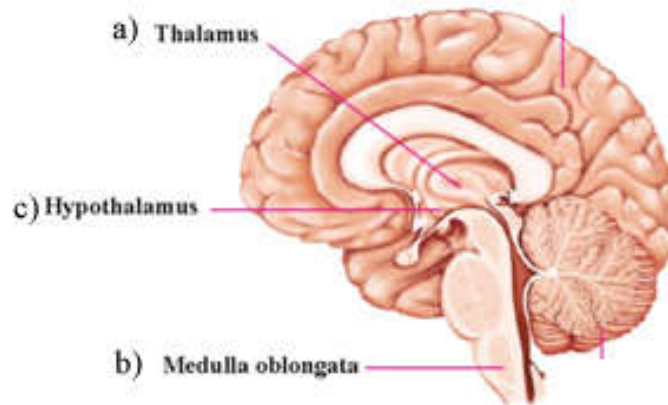
- (a) A: Opsin    B: Rhodopsin
- (b) The deficiency of vitamin A results in the low production of retinal. This in turn create the deficiency of rhodopsin in rod cells.
- (c) Due to the prolonged deficiency of vitamin A, the conjunctiva and cornea will become dry and opaque. This causes xerophthalmia and leads ultimately to blindness

22.

- (a) Adrenal Cortex
- (b) Any two

- i. Cortisole
  - The synthesis of glucose from protein and fat.
  - Controls inflammation and allergy.
  - Slows down the action of defense cells. (Anyone)
- ii. Aldosterone
  - Maintains the salt-water level in the body.
  - Maintains blood pressure. . (Anyone)

22.



- (a) Thalamus: -acts as relay station of impulses to and from the cerebrum. analyses impulses from various parts of the body and sends the important ones to the cerebrum.(Any One)
- (b) Medulla Oblongata: -controls involuntary actions like heart beat, breathing etc
- (c) Hypothalamus:- Plays a major role in the maintenance of homeostasis.  
(Drawing -1 mark, labelling:(  $\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$ ), functions: (  $\frac{1}{2}+\frac{1}{2}+\frac{1}{2}$ ))

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