

SSLC EXAMINATION, MARCH-2019

Time: 1^{1/2} Hours

BIOLOGY

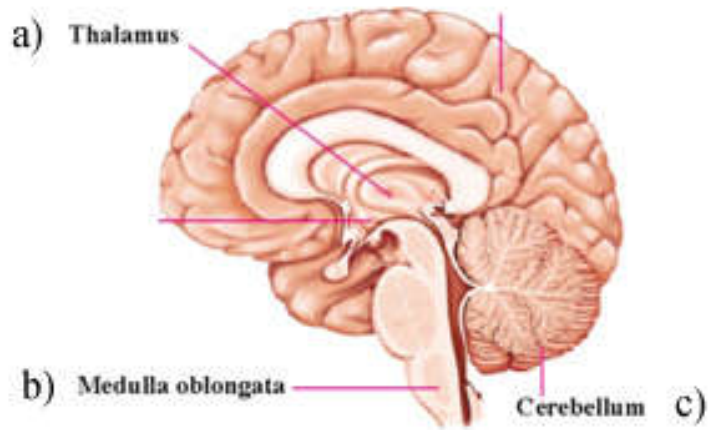
Total Score : 40

Qn	Indicators	Score								
1	a) Hominoidea. b) Mutation theory	$\frac{1}{2}$ $\frac{1}{2}$								
2	Conjunctiva Iris	$\frac{1}{2}$ $\frac{1}{2}$								
3	Myelin sheath is formed due to the repeated encircling of Schwann cells around the axone	1								
4	i. Ribose Sugar ii. AUGC	$\frac{1}{2}$ $\frac{1}{2}$								
5	Ring worm Athlete's foot	$\frac{1}{2}$ $\frac{1}{2}$								
6	a) Islets of Langerhans b) beta cells	$\frac{1}{2}$ $\frac{1}{2}$								
7	<table border="1"> <tbody> <tr> <td>Monocyte</td> <td>Engulfs and destroys germs</td> </tr> <tr> <td>Basophil</td> <td>Stimulates other white blood cells</td> </tr> <tr> <td>Eosinophil</td> <td>Produces chemical substances needed for inflammatory response.</td> </tr> <tr> <td>Neutrophil</td> <td>Produces chemicals that can destroy bacteria.</td> </tr> </tbody> </table>	Monocyte	Engulfs and destroys germs	Basophil	Stimulates other white blood cells	Eosinophil	Produces chemical substances needed for inflammatory response.	Neutrophil	Produces chemicals that can destroy bacteria.	4x $\frac{1}{2}$
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8	<p>A: Malaria Pathogens: Protozoa-plasmodium Symptoms</p> <ul style="list-style-type: none"> • High fever with shivering. • Profuse sweating, Severe headache • Vomiting, diarrhea, anemia <p>B: Tuberculosis. Pathogens: bacteria: Mycobacterium tuberculosis. Symptoms</p> <ul style="list-style-type: none"> • Loss of body weight • Fatigue • Continuous dry cough 	2								

9	<table border="1"> <tr> <td data-bbox="233 184 350 247"></td> <td data-bbox="350 184 802 247"></td> <td data-bbox="802 184 1091 247"></td> <td data-bbox="1091 184 1370 247"></td> </tr> <tr> <td data-bbox="233 247 350 310"></td> <td data-bbox="350 247 802 310"></td> <td data-bbox="802 247 1091 310"></td> <td data-bbox="1091 247 1370 310"></td> </tr> <tr> <td data-bbox="233 310 350 457"></td> <td data-bbox="350 310 802 457">a) Accumulation of insoluble protein in the neural tissues of the brain.</td> <td data-bbox="802 310 1091 457">b) production of dopamine Reduces</td> <td data-bbox="1091 310 1370 457">d) Irregular flow of electric charges in the brain.</td> </tr> <tr> <td data-bbox="233 457 350 562"></td> <td data-bbox="350 457 802 562"></td> <td data-bbox="802 457 1091 562">c) Loss of body balance</td> <td data-bbox="1091 457 1370 562"></td> </tr> </table>										a) Accumulation of insoluble protein in the neural tissues of the brain.	b) production of dopamine Reduces	d) Irregular flow of electric charges in the brain.			c) Loss of body balance		2
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10	<p>a) Stanley L. Miller and Harold C. Urey b) Theory of chemical evolution</p>																	
11	<p>a) A: Genetic scissors : Restriction endonuclease B: Genetic glue : Ligase b) Yes.</p> <ul style="list-style-type: none"> ▪ They will have the ability to produce insulin. ▪ The change that occurred in the genetic constitution will be transferred to the next generation too. In case of mutation the gene might lose the capacity for the production. 																	
12	<ul style="list-style-type: none"> ▪ Blood cannot be prepared artificially. So we can save the life of a person by donating blood. So donate blood and save life. ▪ A healthy person can donate 300 ml of blood within a period of 6 months. ▪ If the level of blood decreases beyond a certain level, it may cause the death of the individual. During such situation for the sustenance of the life the blood donation by a person becomes inevitable. ▪ Before transfusion, blood group matching should be ensured. ▪ Donate blood Donate life. 	2																
13	<p>a) A sudden heritable change in the genetic constitution of an organism is called mutation. b) Crossing over in chromosomes During fertilization causes change in the allele combination. This change causes variations in the offsprings.</p>	2																
14	<p>a) Differences in their external appearances are their adaptations to live in their own habitats. b) Anatomical resemblances justify the inferences that all organisms evolved from a common ancestor. c) Biochemistry and Physiology, Molecular Biology & Evidence from fossils</p>	3																

15	<p>a) Gametes/ Allele</p> <p>b) Red Flower</p> <p>Hybridization experiment, the allele that controls the dominant character (Red) that is expressed. and the other character remains hidden (recessive character- White) in the offsprings of the first generation.</p>	3																		
16	<p>a) Brain: Stroke, Addiction to nicotine</p> <p>b) Lungs: Lung cancer, Bronchitis, Emphysema</p> <p>c) Heart: Hypertension, Loss of elasticity of arteriers, Decrease in functional efficiency</p>	3																		
17	<p style="text-align: center;">Pituitary gland</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">Anterior lobe</th> <th colspan="2" style="text-align: center;">Posterior Lobe</th> </tr> <tr> <th style="width: 16.6%;">TSH</th> <th style="width: 16.6%;">STH</th> <th style="width: 16.6%;">ACTH</th> <th style="width: 16.6%;">Prolactin</th> <th style="width: 16.6%;">Vasopressin</th> <th style="width: 16.6%;">Oxytocin</th> </tr> </thead> <tbody> <tr> <td>Stimulates the activity of the thyroid gland</td> <td>Promotes the growth of the body.</td> <td>Stimulates the activity of adrenal cortex.</td> <td>Production of milk.</td> <td>Reabsorption of water in the kidneys.</td> <td>Contraction of smooth muscles in the uterine wall.</td> </tr> </tbody> </table>	Anterior lobe				Posterior Lobe		TSH	STH	ACTH	Prolactin	Vasopressin	Oxytocin	Stimulates the activity of the thyroid gland	Promotes the growth of the body.	Stimulates the activity of adrenal cortex.	Production of milk.	Reabsorption of water in the kidneys.	Contraction of smooth muscles in the uterine wall.	3
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18	<p>a) Antibiotics are drugs obtained from microorganisms that are used to destroy the growth of other microorganisms that cause diseases.</p> <p>Antibiotics are biochemical substances extracted from living things like bacteria and fungi, which can or prevent the spreading of germs</p> <p>Antibiotics target microorganisms such as bacteria, fungi, and parasites</p> <p>b) Side effects of antibiotics:</p> <ul style="list-style-type: none"> • Regular use develops immunity in pathogens against antibiotics. • Destroys useful bacteria in the body. • Reduces the quantity of some vitamins, in the body. 	3																		
19	<p>a) <u>Aqueous humor</u> formed from blood, and is reabsorbed by blood.</p> <p>b) Membraneous labyrinth in the inner ear is filled with <u>endolymph</u>.</p> <p>c) <u>Ear ossicles</u> amplifies and transmits the vibrations of tympanum to internal ear</p>	3																		

20	<p>a) A: mRNA B: Ribosome b) mRNA: mRNA carries information from DNA to ribosomes and controls protein synthesis c) mRNA molecule that carries information from DNA to ribosomes mRNA reaches ribosomes tRNA carry different kinds of amino acids to ribosomes ased on the information in mRNA protein is synthesized in ribosomes adding amino acids.</p>	3						
21	<p>i. a) Gibberellins b) Auxins c) Ethyphon d) Ethylene</p> <p>ii.</p> <table border="1" data-bbox="235 661 1372 1096"> <thead> <tr> <th data-bbox="235 661 479 766">Plant hormones</th> <th data-bbox="479 661 1372 766">Functions</th> </tr> </thead> <tbody> <tr> <td data-bbox="235 766 479 871">Cytokinin</td> <td data-bbox="479 766 1372 871"> <ul style="list-style-type: none"> Promotes cell division, cell growth and differentiation along with auxin. </td> </tr> <tr> <td data-bbox="235 871 479 1096">Abscisic acid</td> <td data-bbox="479 871 1372 1096"> <ul style="list-style-type: none"> Control the dormancy of embryo in the seed, Control the dropping of leaves and fruits, wilting of leaves, Control flowering Helps to sustain the plant in adverse conditions. </td> </tr> </tbody> </table>	Plant hormones	Functions	Cytokinin	<ul style="list-style-type: none"> Promotes cell division, cell growth and differentiation along with auxin. 	Abscisic acid	<ul style="list-style-type: none"> Control the dormancy of embryo in the seed, Control the dropping of leaves and fruits, wilting of leaves, Control flowering Helps to sustain the plant in adverse conditions. 	4
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22	<p>a) A: Rod cells B: Cone cell b)</p> <table border="1" data-bbox="357 1207 1250 1396"> <thead> <tr> <th data-bbox="357 1207 592 1270">Photoreceptors</th> <th data-bbox="592 1207 1250 1270">Function</th> </tr> </thead> <tbody> <tr> <td data-bbox="357 1270 592 1333">Rod cells</td> <td data-bbox="592 1270 1250 1333">Vision in dim light, black and white vision.</td> </tr> <tr> <td data-bbox="357 1333 592 1396">Cone cells</td> <td data-bbox="592 1333 1250 1396">Bright light vision, Colour vision.</td> </tr> </tbody> </table> <p>Working of the cone cells</p> <ul style="list-style-type: none"> When light falls on cone cells, the photopsin in them dissociate into retinal andopsin. This chemical change creates impulses. <p>Working of rod cells</p> <ul style="list-style-type: none"> When light falls on rod cells, the pigment rhodopsin in them dissociate into retinal andopsin. This chemical change creates impulses. <p>c) The sense of vision</p> <ul style="list-style-type: none"> When the pigments in photoreceptors dissociate, impulses are formed. When get the sense of vision, when these impulses reach the brain through optic nerve. 	Photoreceptors	Function	Rod cells	Vision in dim light, black and white vision.	Cone cells	Bright light vision, Colour vision.	4
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- a) Thalamus
- b) Medulla oblongata
- c) Cerebellum



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