



BIOLOGY – ANSWER KEY

Q.No	Value Points	Score
PART-I (A) (Answer any 4 questions)		
1	Photopsin / Iodopsin	1
2	Plasmodium / Protozoa	1
3	Central canal, Others are parts of Brain	$\frac{1}{2} + \frac{1}{2}$
4	Vestibule, Others are parts related with hearing	$\frac{1}{2} + \frac{1}{2}$
5	Cell, Nucleus , Chromosome, DNA, Gene or Gene, DNA, Chromosome, Nucleus, Cell	1
6	Tympanum, Ear ossicle, Oval window, Cochlea, Hair cells	1
PART-I (B) (Answer 3 questions)		
7	In the process of blood clotting prothrombin in plasma reacts with thromboplastin to form thrombin.	1
8	The rise in body temperature increases the effect of phagocytosis	1
9	Epinephrine	1
PART-II(A)		
10	* Protects the anterior part of eye from being dry - Conjunctiva * Refracts light rays to focus on retina - Cornea * Alter the curvature of lens - Ciliary muscles * Transmits impulses from retina to the brain - Optic nerve	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$
PART-II(B) (Answer any 1 question)		
11	a) Human genome project b) Human genome has about 24000 functional genes. (Any two) Major share of human DNA includes junk genes. There is only 0.2 percent difference in DNA among humans. About 200 genes in humans are identical to those in bacteria.	1 1
12	In the biochemistry and physiology of human beings and Bacteria there are so many resemblances. Eg : (Any two), These resemblances shows that all organisms have a common ancestor.	1+1

PART-III(A) (Answer any 3 questions)						
13	A) cornea B) pupil C) lens D) retina E) optic nerve F) cerebrum	6 X 1/2=3				
14	<pre> graph TD ACTH([ACTH]) --- AC[Adrenal cortex] AC --> Cortisol AC --> Aldosterone AC --> SexHormones[Sex hormones] </pre>	1/2 1 1 1/2				
15	<table border="1"> <thead> <tr> <th>Activities of B-Lymphocytes</th> <th>Activities of T-Lymphocytes</th> </tr> </thead> <tbody> <tr> <td> * Destroy the bacteria by disintegrating cell membrane * Neutralise the toxin of antigens * Destroy the pathogens by stimulating other white blood cells </td> <td> * Stimulate other defense cells of the body * Destroy cancer cells. * Destroy the cells affected by virus. </td> </tr> </tbody> </table>	Activities of B-Lymphocytes	Activities of T-Lymphocytes	* Destroy the bacteria by disintegrating cell membrane * Neutralise the toxin of antigens * Destroy the pathogens by stimulating other white blood cells	* Stimulate other defense cells of the body * Destroy cancer cells. * Destroy the cells affected by virus.	6 X 1/2=3
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16	Interferons, Endorphin, to solve growth disorders	3 X 1 = 3				
PART-III(B) (Answer 1 question)						
17	Diphtheria, Corynebacterium diphtheriae, Inflammation in the lymph glands of the throat. Ash coloured thick coating in the throat. Fever, Throat pain, (Any two)	1 1 1				
PART-IV(A) (Answer any 2 questions)						
18	* HIV * Virus enters the body and multiplies using the genetic mechanism of lymphocytes. Hence the reduces the immunity of the body. * Through sexual contact with HIV infected person From HIV infected mother to the foetus Through the reception of blood and organs affected by HIV By sharing needle and syringe contaminated with HIV (Any two)	1 1 1+1				
19	9 to 11mg / 100ml A) Thyroid E) Parathyroid B) Calcitonin D) Parathormone Prevents the mixing of calcium from bones to blood. / Stores the excess calcium from blood to bones.	1 1/2 + 1/2 1/2 + 1/2 1				
20	a) 42% b) 25% c) 19% d) 14%	4 X 1 = 4				

PART-IV(B)
(Answer any 1 question)

21	a) A) Dorsal root E) Ventral root	$\frac{1}{2} + \frac{1}{2}$
	b) Dorsal root	1
	c) Central canal	1
	d) Cerebrospinal fluid	1
22	a) Crossing over in Chromosomes	1
	b) C --> A --> B	1
	c) During the initial phase of meiosis	1
	d) As a result of this, part of a DNA become the part of another DNA. This causes a difference in the distribution of genes. It causes the expression of new characters in offsprings.	1

PART-V
(Answer any 1 question)

23	a) Stanley Miller and Harold Urey / (Urey and Miller)	1
	b) Methane, Ammonia, Hydrogen and Water vapour.	$4 \times \frac{1}{2} = 2$
	c) Amino acids	1
	d) Theory of Chemical evolution / Oparin – Haldane Hypothesis.	1
24	Copying Diagram	1
	a) Medulla oblongata	1
	b) Thalamus	1
	c) Hypothalamus	1
	d) Cerebellum	1