



## BIOLOGY

### Instructions :

- \* First 15 minutes – Cool off time
- \* Answer 4 questions from **Part-I(A)**
- \* Answer 1 questions from **Part-II(A)**
- \* Answer 3 questions from **Part-III(A)**
- \* Answer 2 questions from **Part-IV(A)**
- \* Answer 1 questions from **Part-V**
- \* Answer 3 questions from **Part-I(B)**
- \* Answer 1 questions from **Part-II(B)**
- \* Answer 1 questions from **Part-III(B)**
- \* Answer 1 questions from **Part-IV(B)**

### PART-I (A)

( Answer any 4 questions )

Analyse the word pair relationship and find out the missing word : ( 2 X 1 = 2)

- 1) Rodhopsin : Rode cell ; ..... : Cone cell
- 2) AIDS : HIV ; Malaria : .....

Find the odd one and write the common feature of others : ( 2 X 1 = 2)

- 3) Medulla oblongata, central canal, cerebellum, hypothalamus
- 4) Cochlea, ear ossicle, vestibule, tympanum

Rerrange the following terms in correct sequence considering any scientific basis

- 5) DNA, Cell, Gene, Chromosome, Nucleus ( 2 X 1 = 2)
- 6) Tympanum, Hair cells, Oval window, Cochlea, Ear ossicle

### PART-I (B)

( Answer all the 3 questions )

Correct the statement by changing the underlined part : ( 2 X 1 = 2)

- 7) In the process of blood clotting prothrombin in plasma reacts with fibrinogen to form thrombin.
- 8) The rise in body temperature increases the rate of multiplication of pathogens

Select the most appropriate answer from the given choices : ( 1 X 1 = 1)

- 9) A hormone secreted by medulla of Adrenal gland  
( Cortisol, Epinephrine, Aldosterone, Sex hormone )

## PART-II(A)

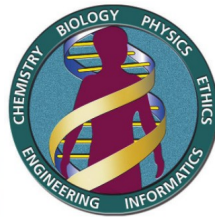
10. Name the part of eye which perform the following functions ? ( 4 X 1/2 = 2)

Function	Part of eye
* protects the anterior part of eye from being dry	* .....
* refracts light rays to focus on retina	* .....
* alter the curvature of lens	* .....
* transmits impulses from retina to the brain	* .....

## PART-II(B)

( Answer any 1 question )

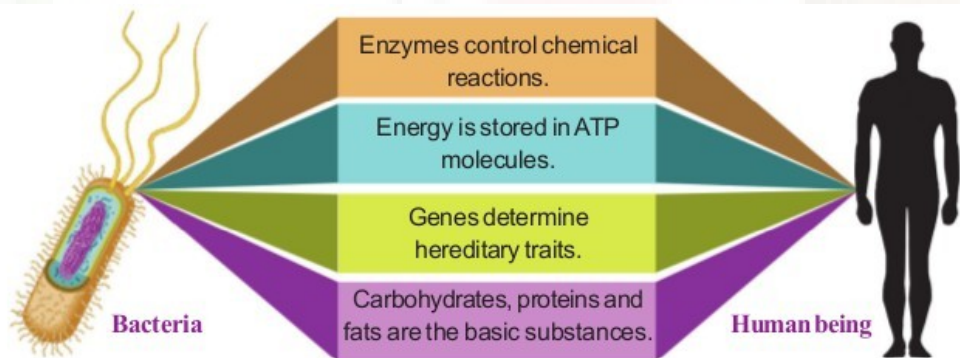
11. Observe the picture



( 2 X 1 = 2 )

- a) Identify the logo ?
- b) Write down any two findings of the project related with this logo ?

12. Analyse the close resemblances in the biochemistry and physiology of human beings and Bacteria . Write any two inferences related to the evidences for evolution ? ( 2 )

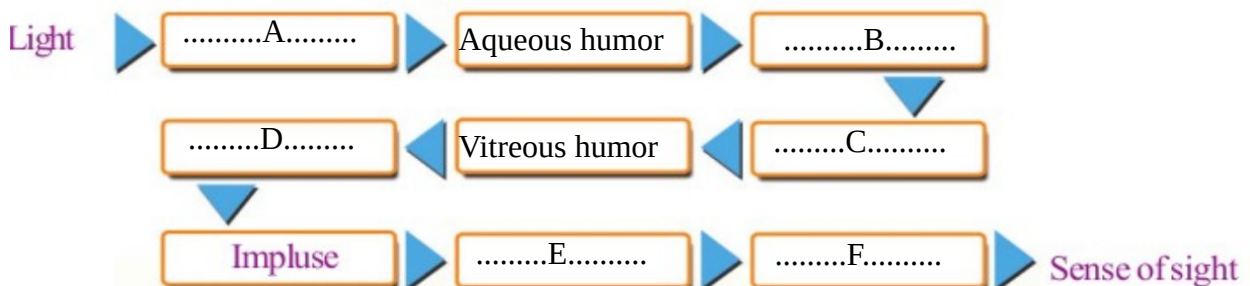


## PART-III(A)

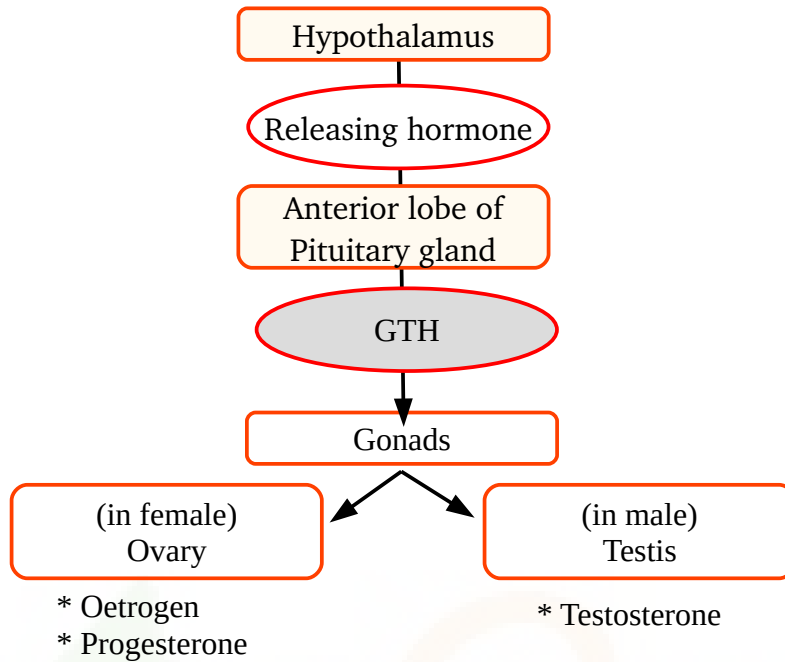
( Answer any 3 questions )

13. Prepare a flow chart of vision ?

( 6 X 1/2 = 3)



14. Analyse the flowchart given below and Replace the hormone 'GTH' with 'ACTH' ( 3 X 1 = 3 )



15. Tabulate the following activities suitably ( 6 X 1/2 = 3 )

- \* Stimulate other defense cells of the body.
- \* Destroy cancer cells.
- \* Neutralise the toxin of the antigens.
- \* Destroy the cells affected by virus.
- \* Destroy the pathogens by stimulating other white blood cells.
- \* Destroy the bacteria by disintegrating their cell membrane.

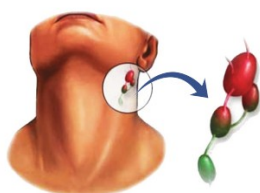
Activities of B-Lymphocytes	Activities of T-Lymphocytes

16. Complete the table of proteins prepared by Genetic engineering ? ( 3 X 1 = 3 )

Protein required for treatment	Usage
.....	Treatment of viral diseases
.....	To reduce pain
Somatotropin	.....

**PART-III(B)**

17. Observe these pictures and answer the following questions : ( 3 X 1 = 3 )

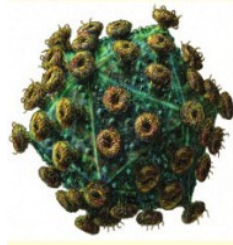


- These pictures indicate a disease. Which is the disease ?
- Write the name of bacteria that causes this disease ?
- What are the major symptoms of this disease ?

### PART-IV(A)

( Answer any 2 questions )

18. Observe the picture :

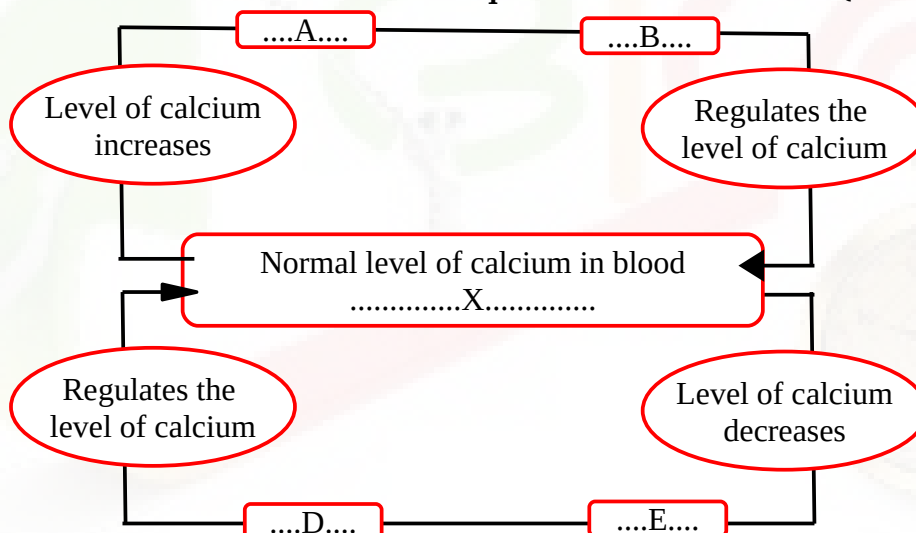


( 4 X 1 = 4)

- Identify the Microorganism ?
- How does this pathogen affects our immune system ?
- Write any two methods of transmission of this disease ?

19. Observe the illustration and answer the questions

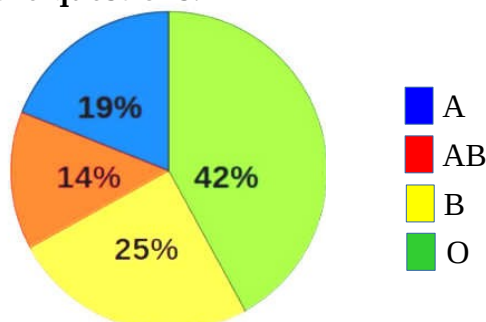
( 4 X 1 = 4)



- What is the normal level of **calcium** ('X') in blood ?
- Name the glands denoted by 'A' and 'E'
- Name the hormones denoted by 'B' and 'D'
- Write any one function of the hormone 'B'

20. The pie diagram shows the blood group of the people of a particular locality. Analyse it and answer the questions.

( 4 X 1 = 4)

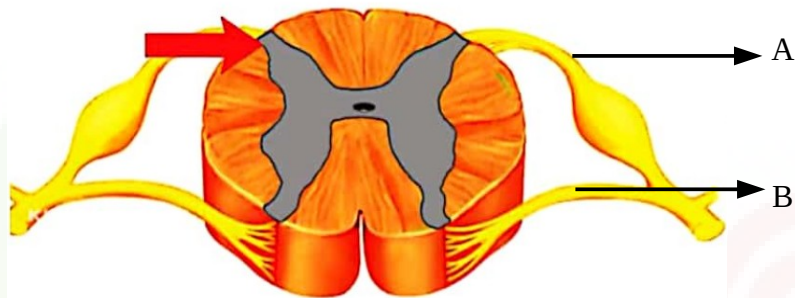


- What is the percentage of blood group having both the antibodies 'a' and 'b' ?
- What is the percentage of blood group having only the antigen 'B' ?
- What is the percentage of blood group having only the antibody 'b' ?
- What is the percentage of blood group in which both the antibodies 'a' and 'b' are absent ?

### PART-IV(B)

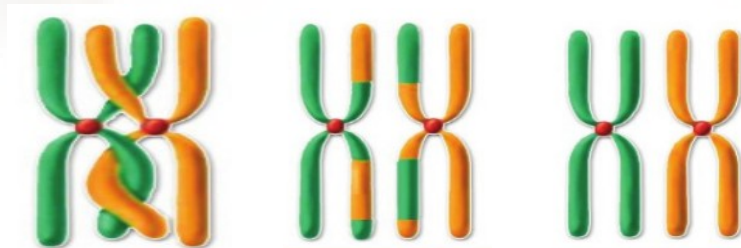
( Answer any 1 question )

21. Observe the diagram and answer the following questions : (4)



- label the parts 'A' and 'B' ?
- Which is the branch of spinal nerve that carry impulses in to the spinal cord ?
- Which is the tube that seen at middle of spinal cord ?
- Which is the fluid filled in this part ?

22. Observe the illustration : ( 4 X 1 = 4 )



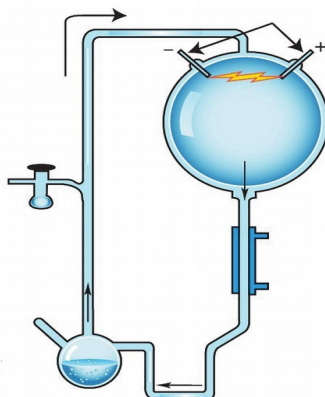
- Identify the process.
- Re-arrange them in correct order.
- At which situation this process is taking place ?
- What is the role of this process in causing variations ?

## PART-V

( Answer any 1 question )

23. Analyse the experiment setup given below :

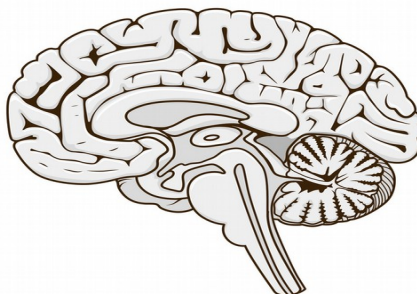
( 5 )



- Who conducted this experiment ?
- Name four inorganic gasses used in the glass flask ?
- What type of organic molecules are obtained in the 'U' tube ?
- Which hypothesis was proved by this experiment ?

24. Copy the diagram of Brain and label the following parts by writing their names

(5)



- Part which controls involuntary movements.
- Part which acts as relay station of impulses.
- Part that helps in the maintenance of homeostasis.
- Part that maintain body equilibrium.

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**BLUE PRINT**

Unit	Type of Questions					Total Questions
	Objective Type (Score-1)	Very Short Answer (Score-2)	Short Answer (Score-3)	Long Answer (Score-4)	Essay Type (Score-5)	
1	1	---	---	1	1	3
2	3	1	1	---	---	5
3	1	---	1	1	---	3
4	1	---	1	1	---	3
5	2	---	1	1	---	4
6	1	---	---	1	---	2
7	---	1	1	---	---	2
8	---	1	---	---	1	2
<b>Total</b>	<b>9</b>	<b>3</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>24</b>

Weightage to the Units		
Unit	Score	%
1	10	17
2	8	13
3	8	13
4	8	13
5	9	15
6	5	8.5
7	5	8.5
8	7	12
<b>Total</b>	<b>60</b>	<b>100 %</b>

Weightage to type of questions		
Questions Type	Score	%
Objective Type	9	15
Very Short Answer	6	10
Short Answer	15	25
Long Answer	20	33
Essay Type	10	17
<b>Total</b>	<b>60</b>	<b>100 %</b>