DISTRICT INSTITUTE OF EDUCATION AND TRAINING THIRUVANANTHAPURAM
EVALUATION TOOL FOR CLASS X - 2022 FEBRUARY
BIOLOGY

Time : 1½ hour   **Maximum Score : 40**

General Instructions

- The first 15 minutes is cool - off time. You may use this time to read the question and plan your answer.
- Questions with different scores are given in separate parts.
- Answer on the basis of instructions in each part.
- Consider score and time while answering.

Part I

A. Answer any **four questions** from 1 to 6. Each question carries 1 score.

(4 x 1 = 4)

1. Select the correct pair.
   - (a) Cytokinin - Dormancy of embryo
   - (b) Ethylene - Cell differentiation
   - (c) Gibberellin - Sprouting of leaves

2. Complete the statement.
   The hypothesis that evolved into .... is that life originated as a result of the changes that occurred in the chemical substances in seawater, under specific conditions in primitive earth.

3. Select the correct answer.
   The pathogen of Bud rot in coconut.
   - (a) Bacteria (b) Protozoa (c) Virus (d) Fungus

4. Identify the word pair relationship and fill the missing word. Mention the relation between the pairs.
   Musk deer : Muscone :: Female silk worm moth : ....

5. Find the odd one. Write the common feature of others.
   Fatty Liver, Haemophilia, Stroke, Hypertension

6. Complete as in the example.
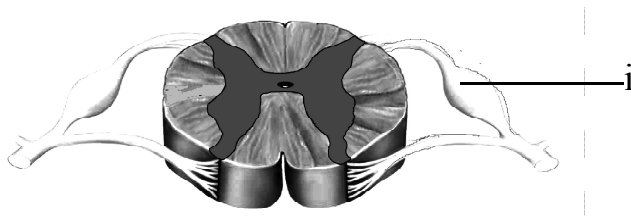   Example : Genetic glue - Ligase
              Genetic scissors - ....

B. Answer **all the questions** from 7 to 9. Each question carries 1 score.

(3 x 1 = 3)

7. Observe the diagram and answer the questions given below.

(a) Identify the part indicated as (i).

8. Select the correct answer.

The most primitive member of the human race.

(a) Homo neanderthalensis (b) Ardipithecus ramidus (c) Australopithecus afarensis (d) Homo erectus

9. Find the odd one. Write the common feature of others.

Urinary bladder contracts, Glycogen is converted to glucose, The pupil in the eye dilates, Gastric activities slow down.

Part II

A. **Answer the question 10. 2 score.**   **(1 x 2 = 2)**

10. The symptoms of a disease affecting the nervous system are given below.

Loss of body balance, irregular movement of muscles, shivering of the body, profuse salivation.

   (a) Identify the disease.
   (b) What is the cause of this disease?

B. Answer any **one question** from 11 to 12. Each question carries 2 score.

(1 x 2 = 2)

11. Arrange the following statements suitably in the table given below.
   (a) Ligaments stretch.
   (b) Curvature of lens increases.
   (c) Ciliary muscles contract.
   (d) Focal length increases.

While viewing nearby objects	While viewing distant objects

12. Observe the figure and answer the questions given below.

Stage 1   Stage 2   Stage 3
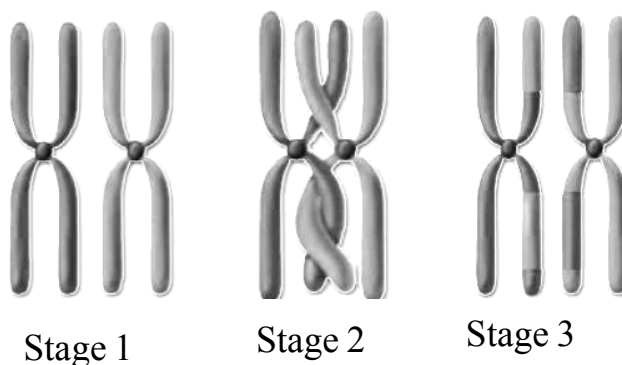
   (a) Identify the process.
   (b) What is the role of this process in causing variations?

Part III

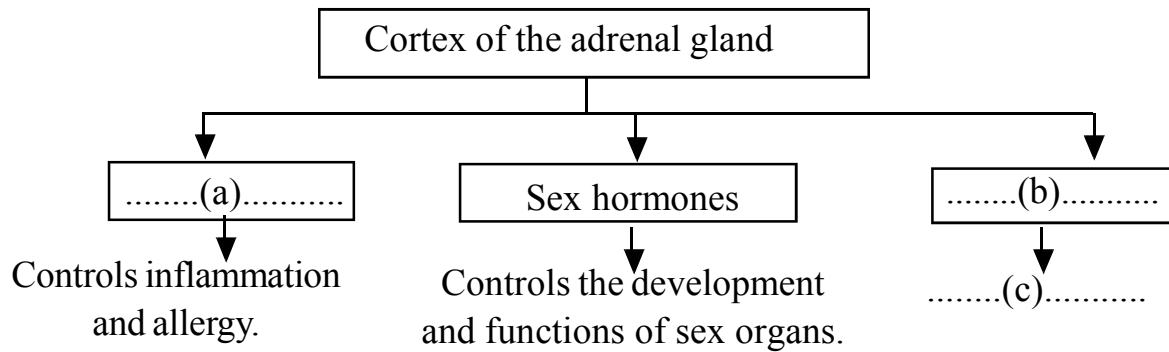A. Answer any **three questions** from 13 to 16. Each question carries 3 score.

(3 x 3 = 9)

13. The hybridization experiment conducted by Mendel on the basis of two contrasting traits of the character height in pea plant is illustrated here. Observe the illustration and answer the questions given below.

Parental plants

Tall   X   Dwarf

TT   tt

(T)   Gametes   (t)

Tt
Tall   (First generation)

(a) Identify the dominant trait and recessive trait.

(b) What are the inferences formulated by Mendel from this experiment?

14. Arrange columns B and C in accordance with the data of column A.

A	B	C
(i) Malaria	(a) Bacteria	(1) Reduces the immunity of the body.
(ii) Tuberculosis	(b) Protozoa	(2) Severe fever, headache, muscle pain, redness in eyes
(iii) AIDS	(c) Fungus	(3) Loss of body weight, fatigue, persistent cough
▓▓▓▓▓	(d) Virus	(4) High fever with shivering and profuse sweating

15. Observe the news paper report and answer the questions given below.

> **Technology helped to identify the real culprit**
> Thiruvananthapuram: The real culprit was identified from among the suspected persons with the help of a technology...........

(a) Identify the technology mentioned in the news paper report.

(b) Who proposed this technology?

(c) How does this technology help to identify the real culprit?

16. Observe the figure and answer the questions given below.

(a) Identify the photoreceptors indicated as (i), (ii).

(b) What are the visual pigments contained in the photoreceptors indicated as (i), (ii) ?

(c) How do these photoreceptors enable vision?

(i)   (ii)

B. **Answer the question 17. 3 score.**   **(1 x 3 = 3)**

17. Complete the illustration.

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                    ┌──────────────────────────────┐
                    │  Cortex of the adrenal gland  │
                    └──────────────────────────────┘
         ┌───────────────────┼───────────────────────┐
         ▼                   ▼                        ▼
┌─────────────────┐  ┌─────────────────┐   ┌─────────────────┐
│ .........(a)............ │  │   Sex hormones   │   │ ........(b)............ │
└─────────────────┘  └─────────────────┘   └─────────────────┘
         ▼                   ▼                        ▼
  Controls inflammation   Controls the development   .........(c)............
    and allergy.          and functions of sex organs.
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Part IV

A. Answer any **two questions** from 18 to 20. Each question carries 4 score.

(2 x 4 = 8)
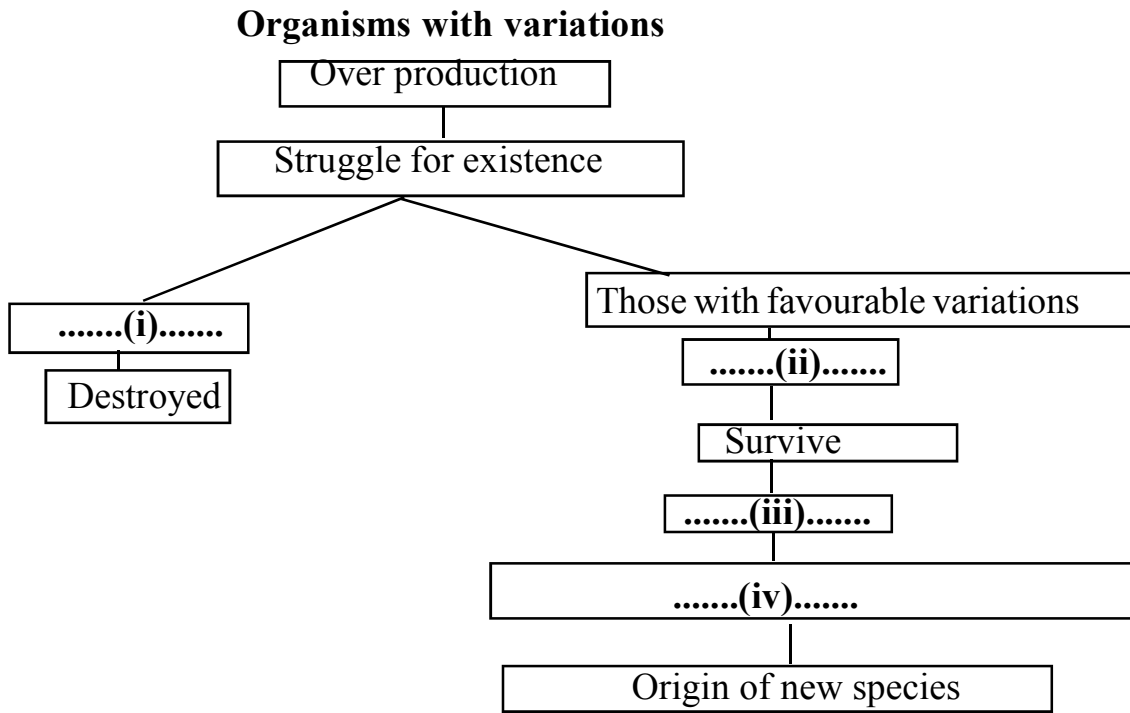
18. Observe the graph and answer the questions given below.
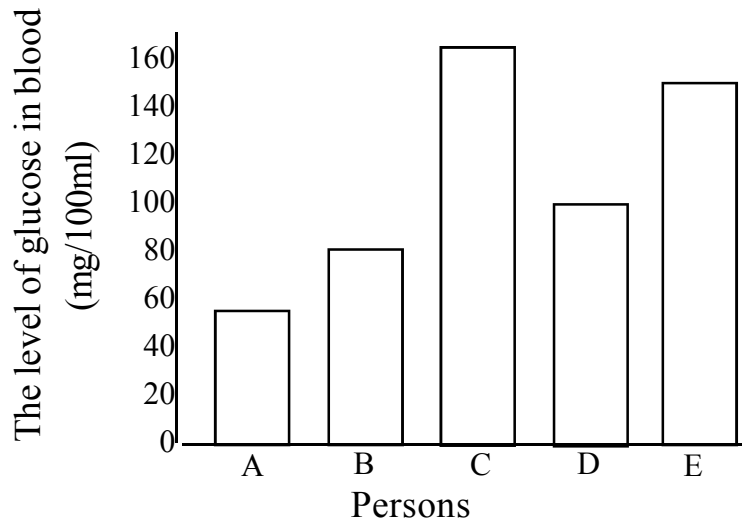
(a) Identify the persons who have normal level of glucose in blood.
(b) Name the hormones that help in regulating glucose level in blood.
(c) Name the persons who are diabetic?
(d) What are the symptoms of diabetes?

19. Complete the table.

Part of ear	Function
.............(a).........	Carries sound waves to the auditory canal.
Auditory canal	......................(b)............................
.............(c)..............	Amplify and transmit the vibrations of the tympanum to the internal ear.
Eustachian tube	....................(d)............................

20. Observe the illustration and answer the questions given below.

Organisms with variations

| Over production |

| Struggle for existence |

| ....(i)....... |

| Destroyed |

| Those with favourable variations |

| ....(ii)....... |

| Survive |

| ....(iii)....... |

| ....(iv)....... |

| Origin of new species |

(a) Complete the illustration.
(b) Identify the theory of evolution illustrated here.
(c) Name the person who presented this theory.

B. Answer any **one question** from 21 to 22. Each question carries 4 score.

(1 x 4 =   4)

21. Make suitable pairs using the words given in the box.
Example : Neutrophil - Synthesizes chemicals that destroy bacteria.

> Monocyte, Synthesizes chemicals required for the inflammatory responses, Neutrophil, Engulfs and destroys germs, Basophil, Eosinophil, Synthesizes chemicals that destroy bacteria, Lymphocyte, Stimulates other white blood cells, Identifies and destroys germs specifically.

22. The symptoms of a disease are given below.
     Affects the mucus membrane of the nose and the throat. An ash coloured thick coating in the throat is formed.
     (a) Identify the disease.
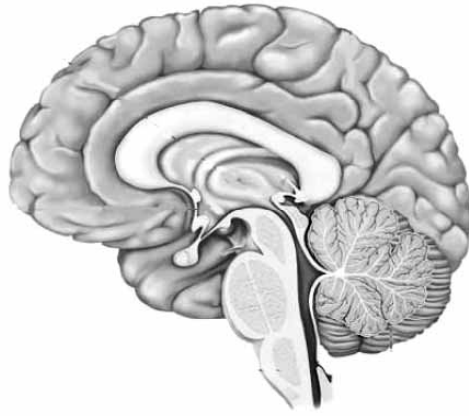   (b) Name the pathogen.
     (c) An ash coloured thick coating in the throat is formed in these patients. Write the reason.
     (d) What is the treatment of this disease?

Part V

A. Answer any **one question** from 23 to 24. Each question carries 5 score.

(1 x 5 = 5)

23. Redraw the figure, identify and label the parts based on the statements given below.

(a) The part that controls involuntary actions like heart beat, breathing.
(b) The part that coordinates muscular activities and maintains equilibrium of the body.
(c) The part that acts as relay station of impulses to and from the cerebrum.
(d) The part that evokes sensations.

24. Vaccines played an important role in helping humanity to overcome the Covid pandemic.
(a) What are vaccines?
(b) What are the components of vaccines?
(c) How do vaccines help in artificial immunization?
(d) Name the diseases for which these vaccines are used.
    (i) O.P.V   (ii) B.C.G