BIOLOGY ENTRANCE TEST SAMPLE PAPER

sample paper only provides
10 MCQ and 2 SAQ

Actual Paper
Total 30 MCQ + 4 SAQ

Each MCQ is 2 marks
Each SAQ is 10 marks

Instructions

1. This is a **closed-book** test.

2. It has a time limit of **90 minutes** and allows for only **ONE attempt (submission)**.

3. Alert the invigilator if you are facing technical difficulties.

4. You are to **ensure** that:

- your laptops, computers and any other devices used for this test is in good functioning order and have uninterrupted power supply and internet connection throughout the duration of the test.
- you are in a conducive environment throughout the duration of the test.
- your answers are correctly saved by the end of the test.

5. You are **allowed** to use:

- a scientific calculator.
- a blank piece of paper (no larger than A4 size) for rough work. The paper will not be accepted for submission at the end of the test.

6. You are **not allowed** to:

- leave the test or leave your devices throughout the duration of the test.
- use the washroom throughout the duration of the test.
- communicate with any person, either face-to-face or through any communication device, other than the invigilator.
- refer to any references, e.g. textbooks, resources from a laptop or smart devices etc.
- share materials (e.g. electronic calculator) during the test.
- use any communication devices such as mobile phones, tablets, smart watches, headsets during the test.

7. Enter the password provided by the invigilator to start Test paper.

Section A

Choose the most appropriate answer from the options provided. Each MCQ is worth 2 marks.

Question 1

Figure 1 shows the structure of a cell. Which statement below is **CORRECT**?

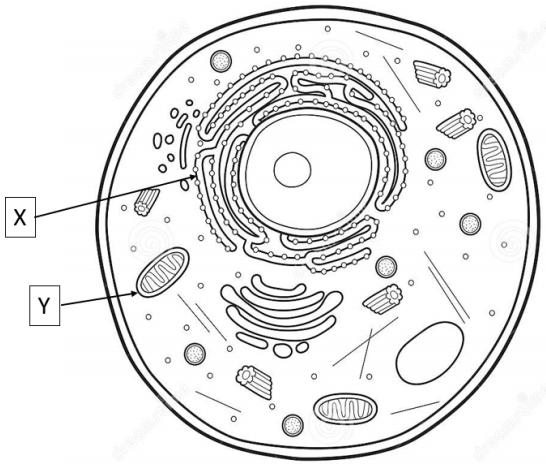


Figure 1

A. This is an animal cell and organelle X provides the energy for the cell.
B. This is an animal cell and organelle Y provides the energy for the cell.
C. This is a plant cell and organelle X provides the energy for the cell.
D. This is a plant cell and organelle Y provides the energy for the cell.

Question 2

Food sample testing was conducted and the results are shown in **Table 1** below:

Table 1

Test	Food Sample Test Result
Iodine test	Blue-black
Biuret test	Purple
Emulsion test	Clear
Benedict's test	Blue

Which organic molecules are most likely found in the food?
A. Starch and glucose
B. Protein and glucose
C. Starch and protein
D. Protein and oil

Question 3

Figure 2 shows the rate of activity of an enzyme-catalysed reaction.
What happens when the solution becomes more alkaline, e.g., with pH 12?

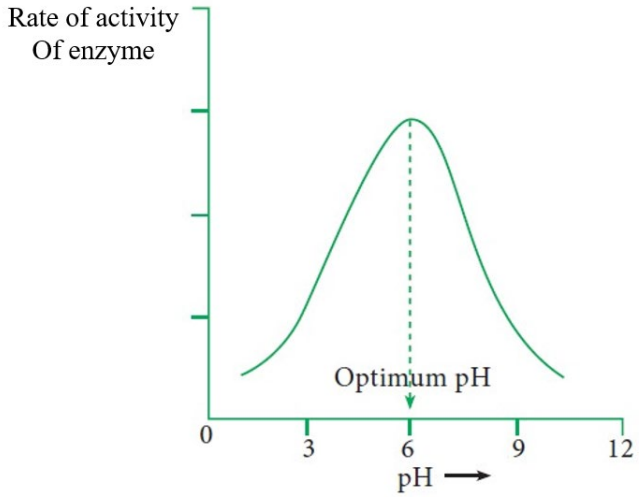


Figure 2

A. Active site of the enzyme changes shape.
B. Active site of the substrate changes shape.
C. Activation energy of the enzyme increases.
D. Activation energy of the enzyme decreases.

Question 4

Which of the following options describes “Diffusion”?

Key: “✓” = True; “×” = False

	Occurs in any substances, e.g., gas and liquid	Takes place through a partially permeable membrane	Substances move down a concentration gradient
A	×	×	✓
B	✓	×	✓
C	✓	✓	×
D	×	✓	✓

Question 5

Which of the following events would directly increase the area of carbon sinks in an ecosystem?

A. Burning more plants
B. Humans eating more meat
C. Increasing soil stability
D. Draining lakes

Question 6

Figure 3 shows the effect of varying light intensity and CO_2 level on the rate of photosynthesis.

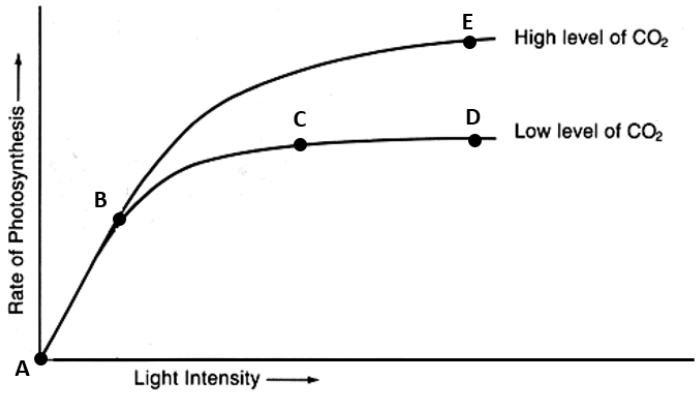


Figure 3

What is limiting the rate of photosynthesis?
A. Light intensity between Point A to B
B. Light Intensity between Point C to D
C. CO_2 level between Point A to B
D. CO_2 level between Point B to C

Question 7

Figure 4 shows a genetic condition that is genetically inherited in a family.

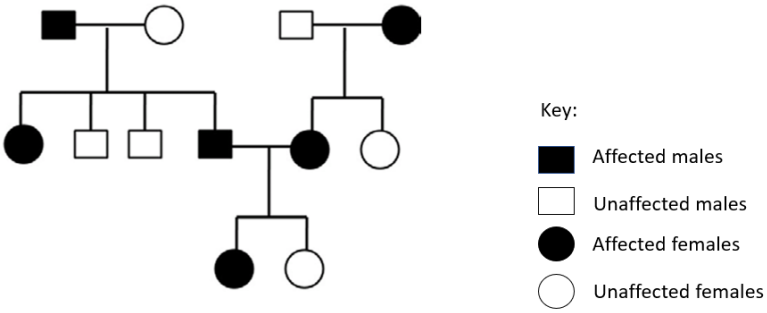


Figure 4

What does the family tree show about this condition?
A. It could be dominant or recessive.
B. It is co-dominant.
C. It is dominant.
D. It is recessive.

Question 8

Which of the following is an example of an ecological community?
A. All the cells of a dog
B. All the bees in a colony
C. The people living in the same village
D. The many types of microbes living in a human intestine

Question 9

Figure 5 shows the structure of the eye. The part labelled X is the _____, which controls the amount of light entering the pupil.

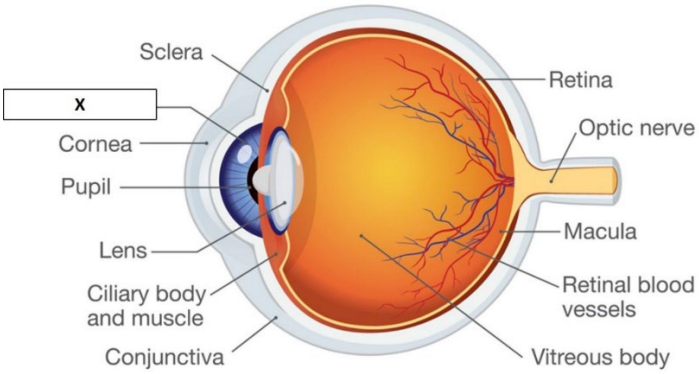
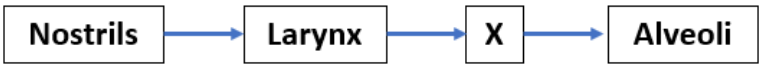


Figure 5

A. Iris
B. Blind spot
C. Suspensory ligament
D. Rectus muscle

Question 10

The diagram below shows the pathway of air flow into the body.
The box labelled "X" should be_____.



A. Pharynx
B. Nasal passage
C. Diaphragm
D. Trachea

End of Section A

Section B

Provide your answers in the spaces below each question.
NOTE: Round off your answers to 2 decimal places, if applicable.

Question 11

Figure 6 shows a food web. Answer the following questions. **(Total marks: 10 marks)**

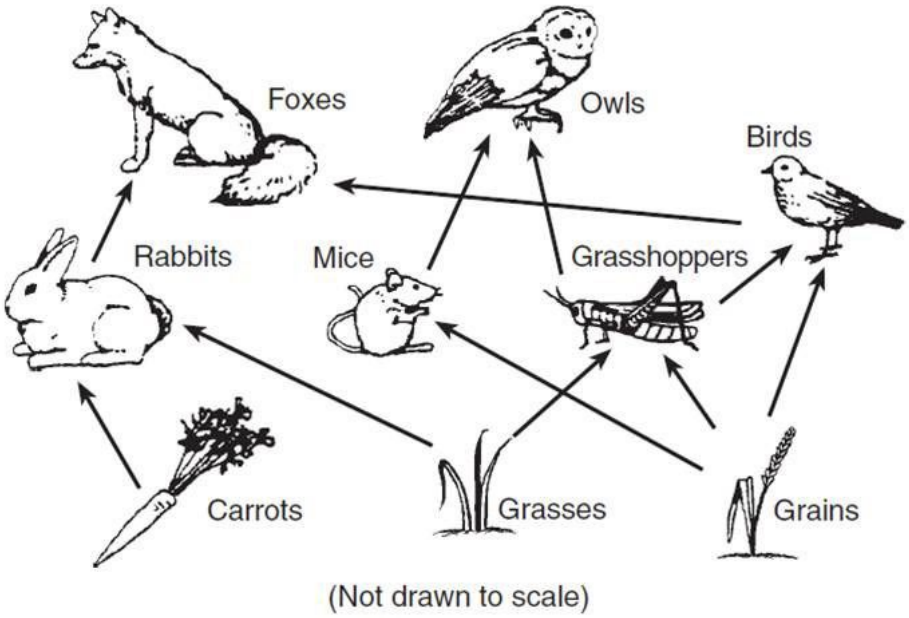


Figure 6

a) Identify **ONE** producer and explain why it is a producer in the food web. (4 marks)

b) Identify **TWO** secondary consumers and explain why they are secondary consumers in the food web. (3 marks)

c) State **THREE** ways in which energy may be lost between trophic levels. (3 marks)

Question 12

Answer the following questions. **(Total marks: 10 marks)**

a) Describe how carbon in the atmosphere is cycled in the Earth's ecosystem. (6 marks)

b) Give **FOUR** reasons why phosphorus is important in the human body. (4 marks)

End of Section B

END OF PAPER