

AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX

ANNUAL EXAMINATIONS (THEORY) 2025

Biology Paper II

Time: 1 hour 50 minutes Marks: 25

INSTRUCTIONS

Please read the following instructions carefully.

1. Check your name and school information. Sign if it is accurate.

**I agree that this is my name and school.
Candidate's Signature**

RUBRIC

2. There are SEVEN questions. Answer ALL questions. Questions 6 & 7 each offer TWO choices. Attempt any ONE choice from each.
3. When answering the questions:

Read each question carefully.
Use a black pointer to write your answers. DO NOT write your answers in pencil.
Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
Complete your answer in the allocated space only. DO NOT write outside the answer box.
4. The marks for the questions are shown in brackets ().
5. You may use a simple calculator if you wish.

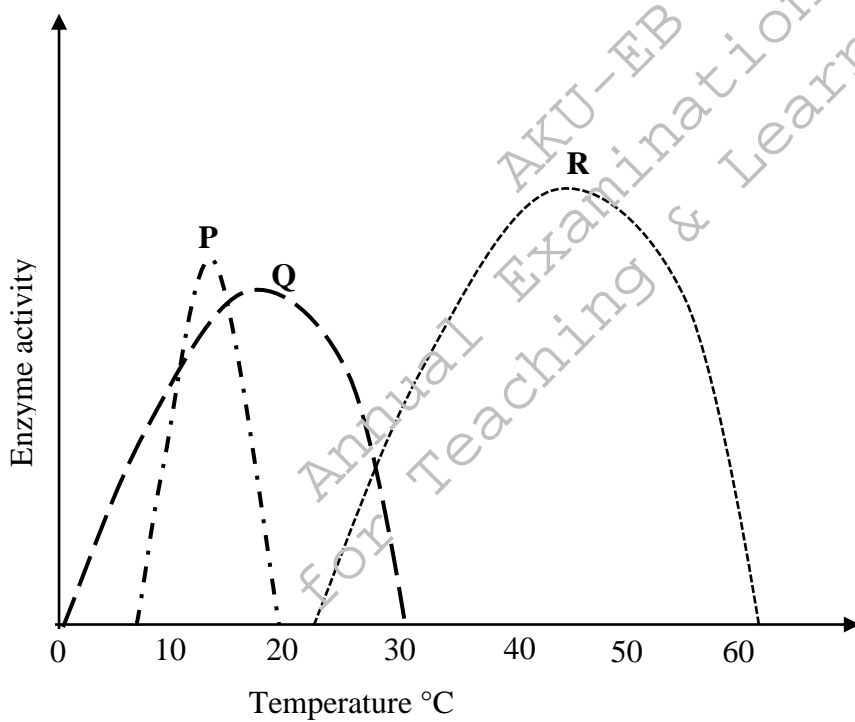
Q.1. (Total 2 Marks)

Sahiba wants to pursue animal husbandry as her field of study.

Describe how studying biology makes it easier for her to pursue her field of interest.

Q.2. (Total 3 Marks)

The given graph represents the effect of temperature on the activity of three different enzymes.



a. Interpret the curve for enzyme Q at 20°C. (1 Mark)

b. Identify the enzyme that works best at temperature above 25°C. (1 Mark)

c. Why does the curve for enzyme **R** show a fall after 45°C? (1 Mark)

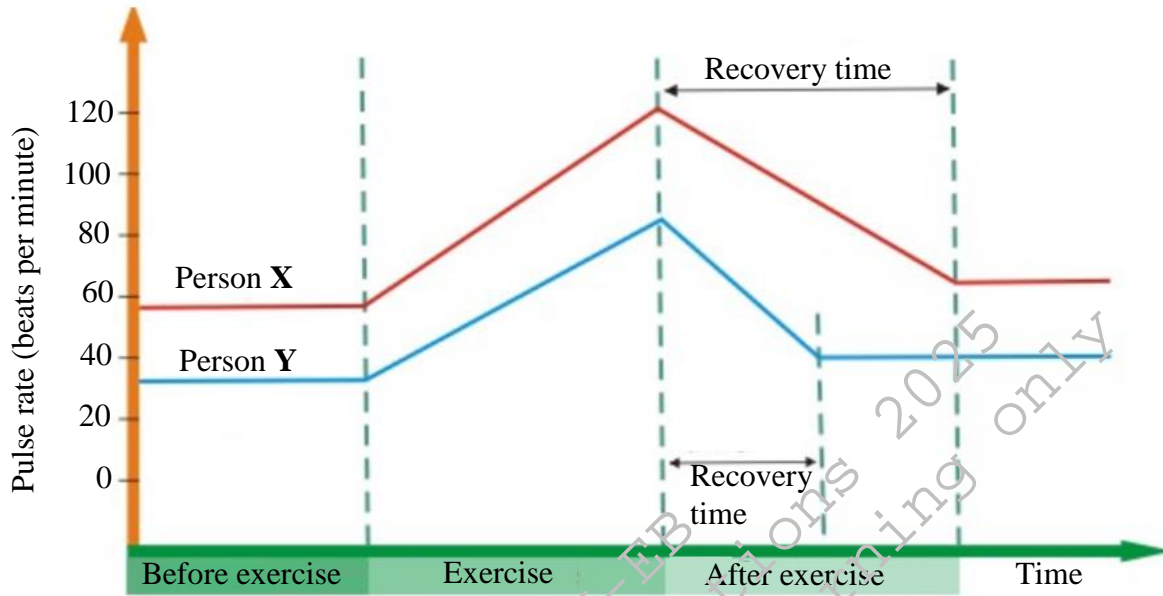
Q.3. (Total 3 Marks)

Mention any THREE drawbacks of the two-kingdom classification system.

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Q.4. (Total 3 Marks)

The given graph shows the effect of exercise on the breathing rates of persons **X** and **Y**. The breathing rate of both individuals is significantly increased.



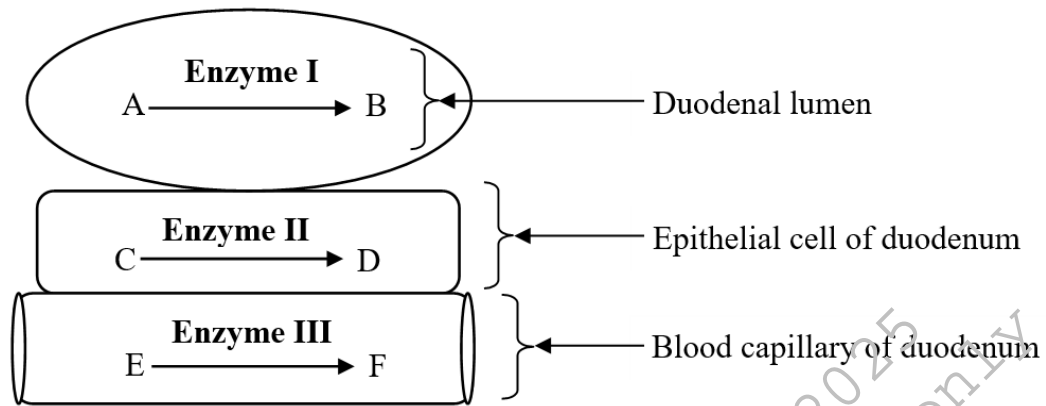
a. With reference to the given graph, identify the unfit person with a valid reason. (2 Marks)

b. Why is the increased breathing rate important for both persons, **X** and **Y**? (1 Mark)

Q.5.

(Total 2 Marks)

The given diagram illustrates the activity of three enzymes in the duodenum of human beings.



Classify the enzymes, **I**, **II** and **III**, as intracellular or extracellular.

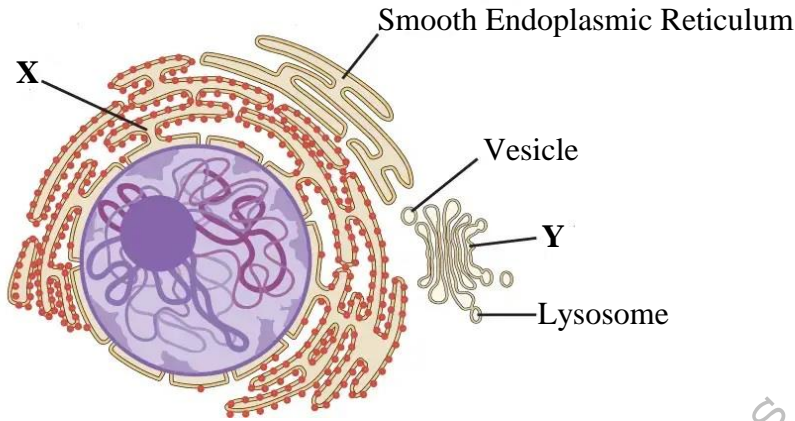
Intracellular Enzyme	Extracellular Enzyme

PLEASE TURN OVER THE PAGE

Q.6. (Total 6 Marks)

EITHER

a. The given diagram shows some organelles of animal cell.



- i. Identify the labelled organelles, **X** and **Y**. (2 Marks)
- ii. Describe any ONE structural feature of each labelled organelle (**X** and **Y**). (2 Marks)
- iii. Describe the arrangement of the organelles **X** and **Y** within the cell with reference to their proximity to the nucleus and their functional interrelationship. (2 Marks)

OR

b. Compare aerobic and anaerobic respiration by mentioning any

- i. THREE similarities. (3 Marks)
- ii. THREE differences. (3 Marks)

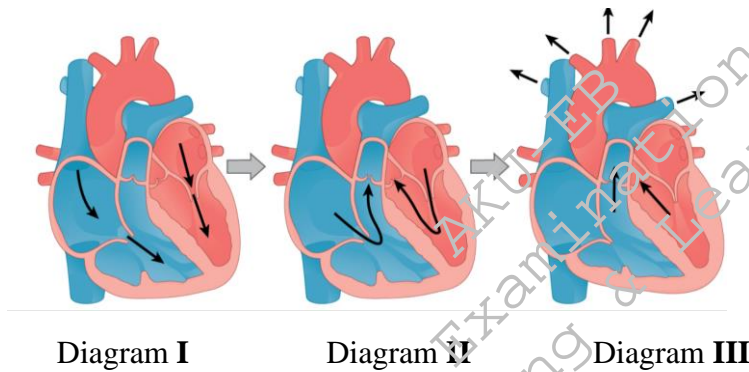
Q.7. (Total 6 Marks)

EITHER

- a. The ultrasound report of a patient’s stomach indicates the failure of closure of both the esophageal sphincter (cardiac sphincter) and pyloric sphincter.
 - i. Describe the effect of the given medical condition on the flow of food digestion. (2 Marks)
 - ii. Write ONE symptom each associated with the malfunctioning of both the sphincters. (2 Marks)
 - iii. Describe the process of peristalsis in moving the bolus through the esophagus. (2 Marks)

OR

b. The given diagrams show the flow of blood in different chambers of the human heart.



Describe each diagram with reference to the state of chambers and the flow of blood. (6 Marks)

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