

AGA KHAN UNIVERSITY EXAMINATION BOARD
HIGHER SECONDARY SCHOOL CERTIFICATE
CLASS XI
MODEL EXAMINATION PAPER 2023 AND ONWARDS
Biology Paper II
Time: 1 hour 30 minutes Marks: 35

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 ELEVEN questions. Answer ALL questions. Questions 10 & 11 offer TWO choices. Attempt any ONE choice from each.
3. When answering the questions:

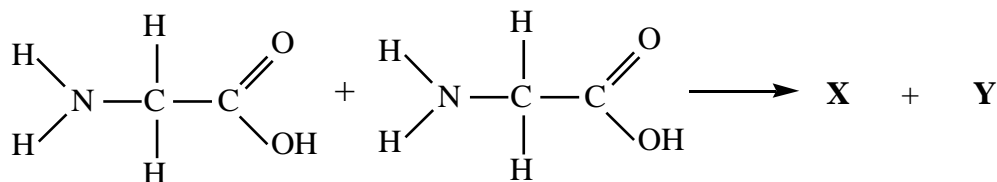
Read each question carefully.
Use a black pointer to write your answers. DO NOT write your answers in pencil.
Use a black pencil for diagrams. DO NOT use coloured pencils.
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.
Complete your answer in the allocated space only. DO NOT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

Q.1.

(Total 4 Marks)

a. Two amino acid molecules are shown in the given equation.

(2 Marks)

Illustrate the products, **X** and **Y**, from the given amino acid molecules.Space for products **X** and **Y**

b. Following are types of functions performed by proteins in the human body.

(2 Marks)

Storage	Support	Regulation	Defence
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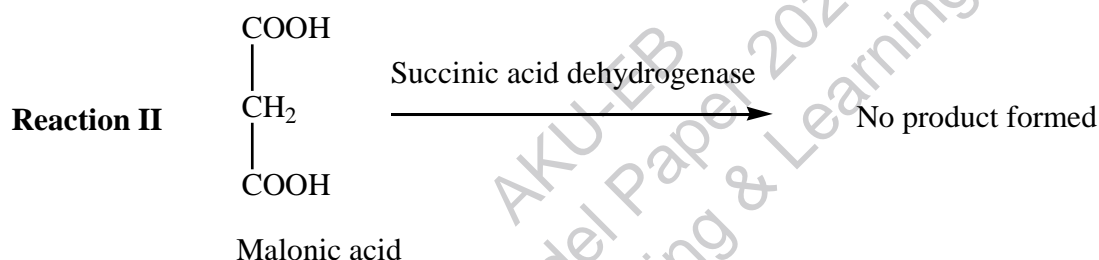
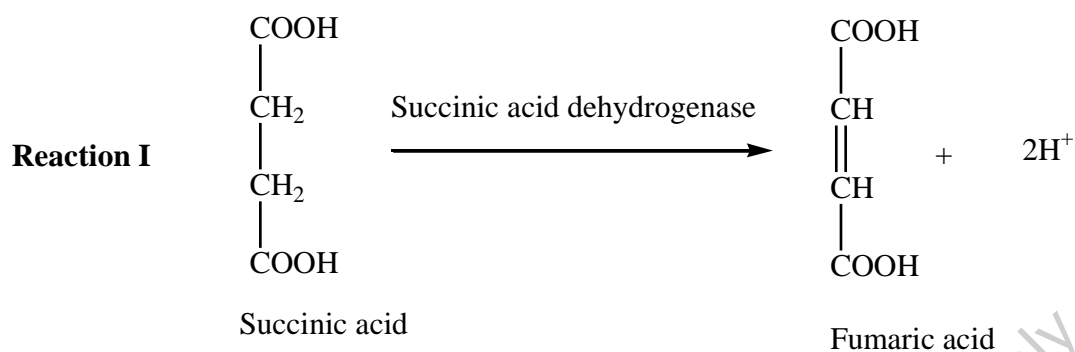
Select the appropriate type of function of proteins for each of the given descriptions.

Description	Type of Function
Recognition of foreign molecules	
Receptors for extracellular signals	

Q.2.

(Total 2 Marks)

Consider the given reactions **I** and **II**.



If succinic acid is added to malonic acid in reaction **II** and its quantity is 10 times greater than malonic acid, will a product be formed? Give a reason to support your answer.

Q.3.

(Total 2 Marks)

Which organelle of the eukaryotic cell is called the cell's recycling centre? Why?

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Q.4. (Total 2 Marks)

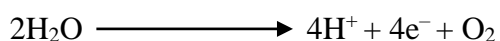
Why are amphibians considered as unsuccessful land vertebrates? Give any TWO reasons.

Q.5. (Total 3 Marks)

Describe any THREE features important for the seed to adapt to dry land.

Q.6. (Total 2 Marks)

The given reaction shows photolysis.



What would be the fate of hydrogen ions (H^+) and electrons (e^-) produced in light dependent reactions of photosynthesis?

Q.7.

(Total 2 Marks)

Differentiate between complete and incomplete alimentary canal with an example.

	Complete Alimentary Canal	Incomplete Alimentary Canal
Difference		
Example		

Q.8.

(Total 2 Marks)

What causes an increase in the size of the chest cavity during inspiration?

Q.9.

(Total 2 Marks)

A doctor listening to the heartbeat through a stethoscope hears two sounds, *lub* and *dub*.

How are these two sounds produced?

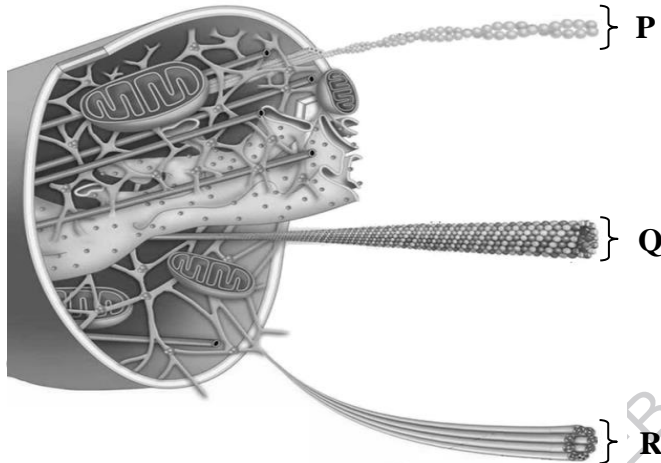
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Q.10.

(Total 7 Marks)

EITHER

- a. The given diagram depicts three components of cytoskeleton which provide mechanical support to the cell.



- Describe the structure and function of the labelled components, **P**, **Q** and **R**, in the given diagram of cytoskeleton. (6 Marks)
- Name the protein subunits of the labelled component **Q**. (1 Mark)

OR

- b. Describe the following.

- Evolutionary origin of class Mammalia particularly exhibited by sub-class Prototheria. (1 Mark)
- Characteristics of sub-classes of Mammalia to which spiny anteater, kangaroo and whale belong. (6 Marks)

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Q.11.

(Total 7 Marks)

EITHER

a.

i. Describe the following respiratory tract infections.

(6 Marks)

- Emphysema
- Pneumonia
- Otitis media

ii. Identify a respiratory tract infection from part i that CANNOT be treated through antibiotics.

(1 Mark)

OR

b. Explain the mechanism of Pressure Flow Hypothesis involved in the movement of sucrose molecules from the leaf to the root.

(7 Marks)

END OF PAPER

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