

Roll Number

SET A



INDIAN SCHOOL MUSCAT  
SECOND TERM EXAMINATION  
**BIOLOGY (044)**

CLASS: XI

Time Allotted: 2 hrs

02.03.2022

Max. Marks: 35

**GENERAL INSTRUCTIONS**

- i) All questions are compulsory.
- ii) The question paper has three sections and 13 questions. All questions are compulsory.
- iii) Section–A has 6 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has a case-based question of 5 marks.
- iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.
- v) Wherever necessary, neat and properly labeled diagrams should be drawn.

**SECTION A**

- 1
  - a) Mitosis is also called equational division. Give reason. 2
  - b) Identify the stage of mitosis that forms equatorial plate?
- 2 Rewrite the complete statements using suitable answers: 2
  - a) The RQ is 0.7 if the substrate used is \_\_\_\_\_.
  - b) Glycolysis is a pathway that occur in the \_\_\_\_\_.
  - c) The first stable product of C3 cycle is \_\_\_\_\_.
  - d) \_\_\_\_\_ PGR helps in the root formation in stem cuttings.

**OR**

Identify the two stages in which ATP is utilised during Glycolysis.

- 3 Identify the two types of nephrons. 2
- 4 State the law of limiting factors. Which is the major limiting factor for photosynthesis? 2
- 5 Photorespiration is considered as a wasteful process. Give reason. 2

**OR**

Write the characteristics of bundle sheath cells of plants adapted to Hatch and Slack Pathway

- 6 Match the following: 2
- |                  |              |
|------------------|--------------|
| Auxin            | - Miller     |
| Gibberellic Acid | - F W Went   |
| Ethylene         | - E Kurosawa |
| Cytokinin        | - Cousin     |

### SECTION B

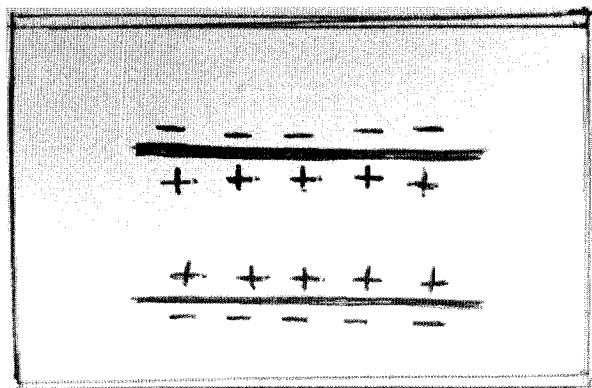
- 7 Enumerate the significance of meiosis (any three points). 3
- 8 Describe any three functions of Gibberellin. 3

**OR**

List the main events occurring during the light reaction of photosynthesis.

- 9 Differentiate between Tidal Volume and Residual Volume by specifying their values. 3

- 10 3



Stage of a polarised membrane of a part of an axonal membrane is given in the picture. Identify the stage and explain the events leading to this stage.

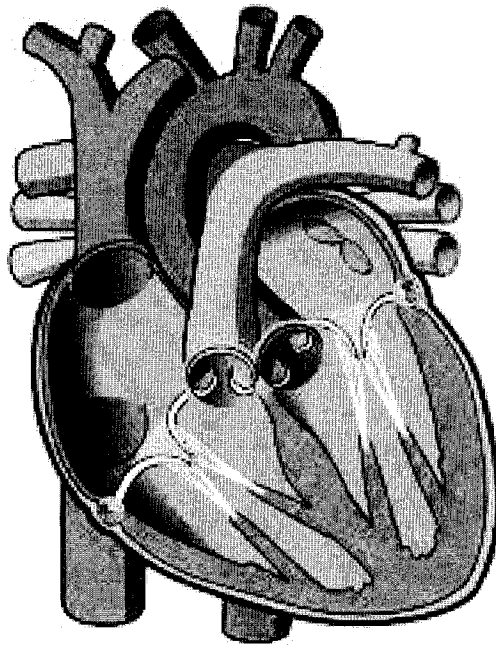
- 11 Explain the chemical events that take place to form a blood clot to seal a wound. 3

- 12 (i)  $2\text{H}_2\text{O} \longrightarrow 4\text{H}^+ + \text{O}_2 + 4\text{e}^-$  3

Based on the above equation answer the following questions:

- Where does this reaction take place in plants?
- What is the significance of this process?

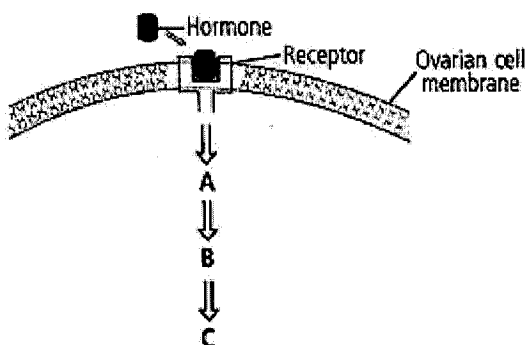
- (ii) Identify the enzyme involved in Chemiosmosis.



Human heart is an amazing organ doing the function of pumping blood to different parts of the body. Heartbeat of a woman is slightly faster than that of a man. Laughing is good for your heart as it reduces stress and gives a boost to your immune system. Answer the following questions related to our heart.

- Define Cardiac output.
- Identify the pacemaker of the heart. Why is it called so?
- Name the valve present in the opening between the right atrium and the right ventricle?
- What is hepatic portal system?

OR



Hormones are released into the bloodstream through which they travel to target sites. The target cell has receptors specific to a given hormone and will be activated by either a lipid-soluble

(permeable to plasma membrane) or water-soluble hormone (binds to a cell-surface receptor). Lipid-soluble hormones diffuse through the plasma membrane to enter the target cell and bind to a receptor protein. Water-soluble hormones bind to a receptor protein on the plasma membrane of the cell. Receptor stimulation results in a change in cell activity, which may send feedback to the original hormone-producing cell.

- a) Identify A, B and C
- b) The following functions are coordinated by certain hormones in our body. Name them.
- c) Name the types of hormones secreted by the Gastro intestinal tract.

**End of the Question Paper**

Roll Number

SET B



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- v) Wherever necessary, neat and properly labeled diagrams should be drawn.

SECTION A

- 1 State the law of limiting factors. Which is the major limiting factor for photosynthesis? 2
- 2 Rewrite the complete statements using suitable answers: 2
  - a) The RQ is 0.9 if the substrate used is \_\_\_\_\_.
  - b) Kreb's cycle is a pathway that occur in the \_\_\_\_\_.
  - c) The first stable product of C<sub>4</sub> cycle is \_\_\_\_\_.
  - d) \_\_\_\_\_ PGR helps in the internodal elongation of stem.

OR

Identify the two stages in which ATP is utilized during Glycolysis.

- 3 Photorespiration is considered as a wasteful process. Give reason. 2

OR

Write the characteristics of bundle sheath cells of plants adapted to Hatch and Slack Pathway

- 4
  - a) Meiosis is also called reduction division. Give reason. 2
  - b) Identify the stage of meiosis in which crossing over takes place?

- 5 Match the following: 2
- |                  |              |
|------------------|--------------|
| Auxin            | - Miller     |
| Gibberellic Acid | - F W Went   |
| Ethylene         | - E Kurosawa |
| Cytokinin        | - Cousin     |

- 6 Distinguish between the two types of nephrons. 2

### SECTION B

- 7 Explain the chemical events that take place to form a blood clot to seal a wound. 3
- 8 Enumerate any three significances of Mitosis? 3
- 9 Differentiate between Vital Capacity and Total Lung Capacity by specifying their combination volumes. 3
- 10 Describe any three functions of Gibberellin. 3

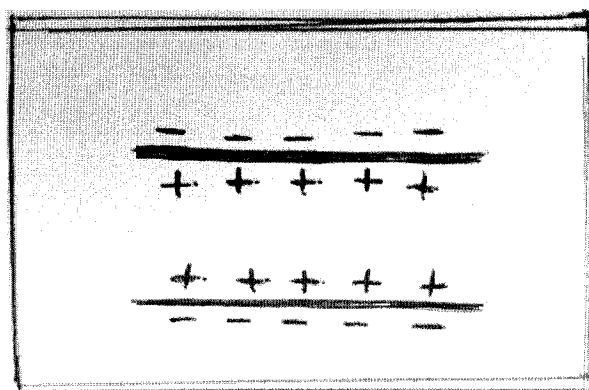
### OR

List the main events occurring during the light reaction of photosynthesis.

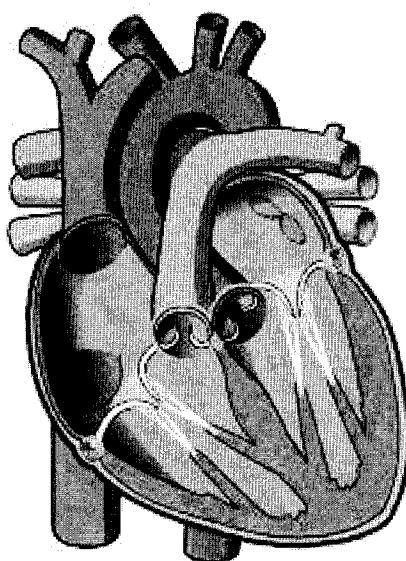
- 11 (i)  $2\text{H}_2\text{O} \longrightarrow 4\text{H}^+ + \text{O}_2 + 4\text{e}^-$  3
- Based on the above equation answer the following questions:
- Where does this reaction take place in plants?
  - What is the significance of this process?

(ii) Identify the enzyme involved in Chemiosmosis.

- 12 3



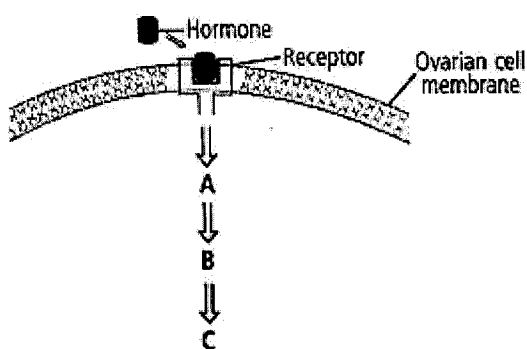
Stage of a polarised membrane of a part of an axonal membrane is given in the picture. Identify the stage and explain the events leading to this stage.



Human heart is an amazing organ doing the function of pumping blood to different parts of the body. Heart beat of a woman is slightly faster than that of a man. Laughing is good for your heart as it reduces stress and gives a boost to your immune system. Answer the following questions related to our heart.

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- Identify the pacemaker of the heart. Why is it called so?
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Hormones are released into the bloodstream through which they travel to target sites. The target cell has receptors specific to a given hormone and will be activated by either a lipid-soluble

(permeable to plasma membrane) or water-soluble hormone (binds to a cell-surface receptor). Lipid-soluble hormones diffuse through the plasma membrane to enter the target cell and bind to a receptor protein. Water-soluble hormones bind to a receptor protein on the plasma membrane of the cell. Receptor stimulation results in a change in cell activity, which may send feedback to the original hormone-producing cell.

- a) Identify A, B and C
- b) The following functions are coordinated by certain hormones in our body. Name them.
  - (i) Vigorous contraction of uterus at the time of child birth.
  - (ii) Regulation of 24hour rhythm of our body.
  - (iii) Increases blood calcium level.
- c) Name the types of hormones secreted by the Gastro intestinal tract.

**End of the Question Paper**



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SECTION A

- 1 Differentiate between Anaphase of mitosis and Anaphase I of meiosis. 2
- 2 Identify the two types of nephrons. 2
- 3 Match the following: 2
  - Auxin - Miller
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  - Ethylene – E Kurosawa
  - Cytokinin - Cousin
- 4 Photorespiration is considered as a wasteful process. Give reason. 2

OR

Write the characteristics of bundle sheath cells of plants adapted to Hatch and Slack Pathway

- 5 Rewrite the complete statements using suitable answers: 2
  - a) The RQ is 1 if the substrate used is \_\_\_\_\_.
  - b) Fermentation occurs in the \_\_\_\_\_ of the cell.
  - c) The leaf anatomy of C4 plants is \_\_\_\_\_.
  - d) \_\_\_\_\_ PGR is known as the stress hormone.

OR

Identify the two stages in which ATP is utilized during Glycolysis.

- 6 State the law of limiting factors. Which is the major limiting factor for photosynthesis? 2

### SECTION B

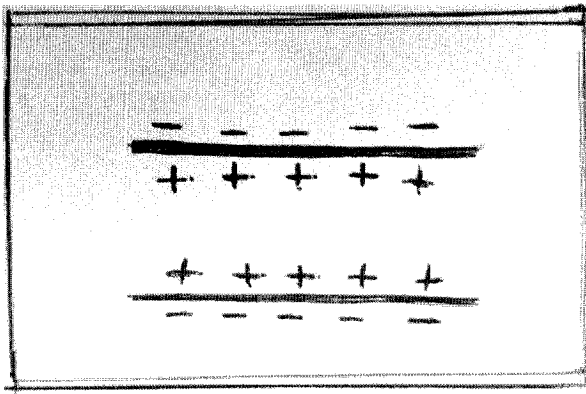
- 7 Enumerate the significance of meiosis (any three points). 3
- 8 Describe any three functions of Auxin. 3

**OR**

List the main events occurring during the light reaction of photosynthesis.

- 9 Define Functional residual volume, Vital capacity and Expiratory Reserve volume. 3

- 10 3



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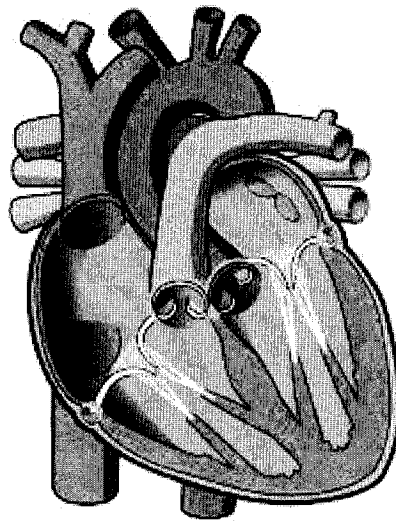
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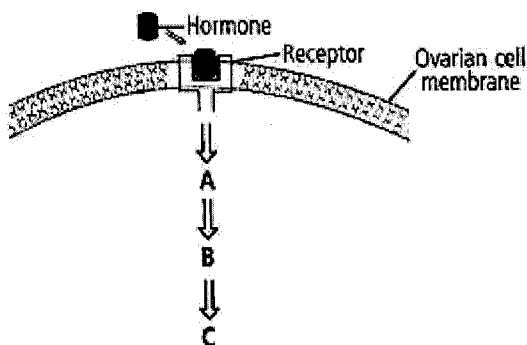
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