

GULF SAHODAYA EXAMINATION (SAUDI CHAPTER)

FEBRUARY, 2016

STD XI

SUB: BIOLOGY

MAX MARKS: 70

TIME: 3 ½ HRS

GENERAL INSTRUCTIONS

1. This question paper consists of five sections A, B, C, D and E.
2. All questions are compulsory.
3. There is no overall choice. However an internal choice has been provided in one question of 2 marks, one question of 3 marks and one question of 5 marks weightage. Attempt only one of the choices in such questions.
4. Section A contains question number 1 to 5, very short answer type questions of 1 mark each.
5. Section B contains question number 6 to 10, short answer type I of 2 marks each.
6. Section C contains question number 11 to 22, short answer type II of 3 marks each.
7. Section D contains question number 23, value based question of 4 marks.
8. Section E contains question numbers 24, 25 and 26 long answer type questions of 5 marks each. Question numbers 25 and 26 are OTBA questions.

SECTION A

(1 X 5 = 5)

Q1. Can you identify the correct sequence of taxonomic category?

- (i) Species ----- Order----- Phylum ----- Kingdom
- (ii) Genus -----Species -----Order -----Kingdom
- (iii) Species ----- Genus ----- Order ----- Phylum

Q2. Why are the members of Deuteromycetes called imperfect fungi?

Q3. Why are the flowers of cucurbits referred to as epigynous?

Q4. What is the function of intercalated discs in the cardiac muscles?

Q5. Why is there no secondary growth in a monocot stem?

SECTION B

(2 X 5 = 10)

Q6. Differentiate between polyps and medusae.

Q7. Pick out the plant with whorled arrangement of leaves from the list given below and say why it is categorised so?

Neem, Alstonia, Nepenthes

Q8. What is trihydroxy propane commonly called? Write its structural formula.

Q9. Differentiate between apoplast and symplast pathways of movement of water in plants.

Q10. Write the differences between pectoral and pelvic girdles.

OR

Name the hormones secreted by α cells and β cells of pancreas respectively. How is glucose homeostasis in our blood maintained by these hormones?

SECTION C

(3 X 12 = 36)

Q11. Name the type of fertilisation that is unique to angiosperms. Describe it.

Q12. Answer the following with reference to the anatomy of dicot stem.

(i) Where exactly are the cambial cells located in the vascular bundle?

(ii) What is the name given to such a bundle?

(iii) How are xylem vessels arranged?

(iv) What type of cells constitute the pith?

Q13. What are the following and where do you find them in animal body?

(i) Chondrocytes (ii) Axons (iii) Ciliated epithelium

Q14. The concentration of a substrate is allowed to increase continuously.

(i) Explain the effect of this rise on the rate of enzymatic reaction.

(ii) Why does an enzyme catalyse only one kind of reaction?

Q15.(a) Why can cytokinesis not occur in plant cells the same way as it occurs in animal cells?

(b) How is it accomplished in plant cells?

Q16. In which phase of meiosis are the following formed? Choose the answers from hint points given

below:

(a) Synaptonemal complex -----

(b) Recombination nodules -----

(c) Chiasmata formation -----

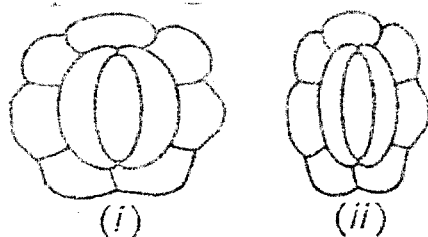
(d) Terminalisation of chiasmata -----

(e) Interkinesis -----

(f) Compaction of chromosomes -----

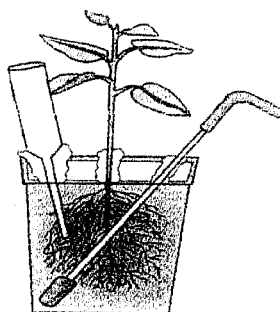
Hints: (1) After formation of diad of cells (2) Zygotene (3) Leptotene (4) Pachytene (5) Diakinesis (6) Diplotene

Q17. Observe the diagrams and answer the following questions:



- Are these types of guard cells observed in monocot or in dicot plants?
- Which of these shows a higher water content?
- Which element plays an important role in the opening and closing of stomata?

Q18.



- Name the technique shown in the figure and the scientist who demonstrated this technique for the first time.
- Name at least two plants for which this technique can be employed for their commercial production.
- What is the significance of aerating tube and feeding funnel in this set up?

Q19. Describe the light harvesting complexes of photosynthesis.

Q20. A process is occurring throughout the day in 'X' organism. Cells are participating in this process. ATP, CO₂ and water are formed. It is not a light dependent process.

- Name the process.
- Is it a catabolic or anabolic process?
- What could be the raw material for this process?

Q21. Give the schematic representation of glycolysis highlighting the steps where NADH+H and ATP are formed.

OR

Draw and describe the growth curve that is characteristic of a living organism growing in a natural environment. How is it expressed?

Q22. Explain the mechanism of vision in human beings.

SECTION D

(1 X 4 = 4)

Q23. The most important function of plasma membrane is the transport of molecules across it. Anisha is confused with the terms 'active transport', 'facilitated diffusion', 'osmosis', 'passive transport' etc. Help her in answering the following questions.

- (a) What is passive transport?
- (b) What type of transport is facilitated diffusion?
- (c) What is osmosis?
- (d) What value do you learn from this?

SECTION E

(3 X 5 = 15)

Q24. Explain the role of different segments of nephron in urine formation and osmoregulation with the help of neat labelled diagram.

OR

What is the role of calcium ions, troponin and F-actin during contraction in striated muscles in humans? Represent diagrammatically the stages in the cross bridge formation.

(OTBA) OPEN TEXT BASED ASSESSMENT

Instructions for students:

1. These questions are based on one of the themes provided to you by the board.
2. Please ensure that you get a copy of the relevant theme from the school to refer while answering the questions.
3. Each question carries 5 marks.
4. Answer these questions logically and coherently based on the concepts learnt during teaching learning sessions till class XI, their applicability with respect to the open text material and your own awareness of the given theme.

Q25. You must have observed that air pollution is increasing drastically in cities. Is it necessary to control air pollution? Why? As an individual how can you contribute to having 'clean air'?

Q26. What is cotton dust? How does it affect workers in mills that manufacture yarn? How can workers be protected from cotton dust in an industry?

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SECTION A**(1 X 5 = 5)**

Q1. Can you identify the correct sequence of taxonomic category?

- (i) Species ----- Order----- Phylum ----- Kingdom
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- (iii) Species ----- Genus ----- Order ----- Phylum

Q2. Why are the members of Deuteromycetes called imperfect fungi?

Q3. Why is the leaf of neem called unipinnately compound?

Q4. What is the function of intercalated discs in the cardiac muscles?

Q5. Why is there no secondary growth in a monocot stem?

SECTION B**(2 X 5 = 10)**

Q6. Describe the canal system of sponges.

Q7. Mention the special function performed by

- (i) Pneumatophores of rhizophora
- (ii) Underground stems of grass

- Q8. What is trihydroxy propane commonly called? Write its structural formula.
- Q9. Differentiate between apoplast and symplast pathways of movement of water in plants.
- Q10. Write the differences between pectoral and pelvic girdles.

OR

Name the hormones secreted by α cells and β cells of pancreas respectively. How is glucose homeostasis in our blood maintained by these hormones?

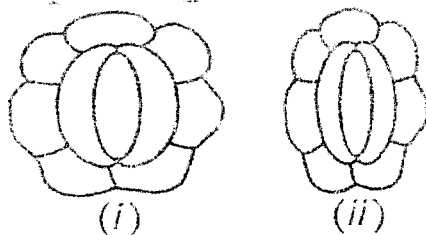
SECTION C

(3 X 12 = 36)

- Q11. Name the type of fertilisation that is unique to angiosperms. Describe it.
- Q12. Answer the following with reference to the anatomy of dicot root.
- (i) Where is pericycle located?
 - (ii) How are xylem vessels arranged?
 - (iii) What do you call such an arrangement?
 - (iv) Which type of cells constitute the cortex?
- Q13. What are the following and where do you find them in animal body?
- (i) Chondrocytes
 - (ii) Axons
 - (iii) Ciliated epithelium
- Q14. The concentration of a substrate is allowed to increase continuously.
- (i) Explain the effect of this rise on the rate of enzymatic reaction.
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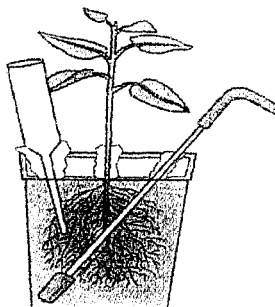
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Q19. What can we conclude from the statement that the action and absorption spectra of photosynthesis overlap? At which wavelength do they show peaks?

Q20. A process is occurring throughout the day in 'X' organism. Cells are participating in this process. ATP, CO₂ and water are formed. It is not a light dependent process.

- Name the process.
- Is it a catabolic or anabolic process?
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Q21. Give the schematic representation of glycolysis highlighting the steps where NADH+H and ATP are formed.

OR

Draw and describe the growth curve that is characteristic of a living organism growing in a natural environment. How is it expressed?

Q22. Draw a diagram showing parts of a human eye. Name and label the following.

- (i) A region where photoreceptor cells are not present.
- (ii) Point where visual resolution is the greatest.
- (iii) Space between cornea and lens.
- (iv) Space between lens and retina.

SECTION D

(1 X 4 = 4)

Q23. The most important function of plasma membrane is the transport of molecules across it. Anisha is confused with the terms 'active transport', 'facilitated diffusion', 'osmosis', 'passive transport' etc. Help her in answering the following questions.

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