

In The Name Of Allah

# AMEER TUITION CENTRE

## KAYALPATTANAM – 628 204.

Register No :

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### HSC FIRST YEAR (+1) BIOLOGY BOOK BACK MCQ - 2025

**Time Allowed : 1.30 Hours****Maximum Marks : 77**

- Instructions :**
- (1) check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
  - (2) Use Black or Blue ink to write and pencil to draw diagrams.

**Note :** Candidate should answer **PART – I (Bio - Botany)** and **PART – II (BIO - Zoology)** in separate answer – books.

### PART – I BIO – BOTANY

#### CHAPTER : 1

#### LIVING WORLD

**05 x 1 = 05**

1. Which one of the following statement about virus is correct?
  - a. Possess their own metabolic system
  - b. They are facultative parasites
  - c. They contain DNA or RNA
  - d. Enzymes are present
2. Identify the incorrect statement about the Gram positive bacteria
  - a. Teichoic acid absent
  - b. High percentage of peptidoglycan is found in cell wall
  - c. Cell wall is single layered
  - d. Lipopolysaccharide is present in cell wall
3. Identify the Archaeobacterium
  - a. *Acetobacter*
  - b. *Erwinia*
  - c. *Treponema*
  - d. *Methanobacterium*
4. The correct statement regarding Blue green algae is \_\_\_\_\_
  - a. lack of motile structures
  - b. presence of cellulose in cell wall
  - c. absence of mucilage around the thallus
  - d. presence of floridean starch
5. Identify the correctly matched pair
  - a. Actinomycete – a) Late blight
  - b. Mycoplasma – b) lumpy jaw
  - c. Bacteria – c) Crown gall
  - d. Fungi – d) sandal spike

**CHAPTER : 2****PLANT KINGDOM****04 x 1 = 04**

- Which of the plant group has gametophyte as a dominant phase?
  - Pteridophytes
  - Bryophytes
  - Gymnosperms
  - Angiosperms
- Which of following represents gametophytic generation in pteridophytes?
  - Prothallus
  - Thallus
  - Cone
  - Rhizophore
- The haploid number of chromosome for an angiosperm is 14, the number of chromosome in its endosperm would be
  - 7
  - 14
  - 42
  - 28
- In gymnosperm endosperm is formed
  - At the time of fertilization
  - Before fertilization
  - After fertilization
  - Along with the development of embryo

**CHAPTER : 3****VEGITATIVE MORPHOLOGY****05 x 1 = 05**

- Which of the following is polycarpic plant?
  - Mangifera*
  - Bambusa*
  - Musa*
  - Agave*
- Roots are
  - Descending, negatively geotropic, positively phototropic
  - Descending, positively geotropic, negatively phototropic
  - Ascending, positively geotropic, negatively phototropic
  - Ascending, negatively geotropic, positively phototropic
- Bryophyllum* and *Dioscorea* are example for
  - Foliar bud, apical bud
  - Foliar bud, cauline bud
  - Cauline bud, apical bud
  - Cauline bud, foliar bud
- Which of the following is the correct statement?
  - In *Pisum sativum* leaflets modified into tendrils
  - In *Atalantia* terminal bud is modified into thorns
  - In *Nepenthes* midrib is modified into lid
  - In *Smilax* inflorescence axis is modified into tendrils
- Select the mismatch pair
 

a. <i>Musa</i>	-	Unicostate	b. <i>Lablab</i>	-	Trifoliolate
c. <i>Acalypha</i>	-	Leaf mosaic	d. <i>Allamanda</i>	-	Ternate phyllotaxy

**CHAPTER : 4****REPRODUCTIVE MORPHOLOGY****05 x 1 = 05**

- Vexillary aestivation is characteristic of the family
  - Fabaceae
  - Asteraceae
  - Solanaceae
  - Brassicaceae
- Gynoecium with united carpels is termed as
  - Apocarpous
  - Multicarpellary
  - Syncarpous
  - None of the above
- Aggregate fruit develops from
  - Multicarpellary, apocarpous ovary
  - Multicarpellary, syncarpous ovary
  - Multicarpellary ovary
  - Whole inflorescence
- In an inflorescence where flowers are borne laterally in an acropetal succession the position of the youngest floral bud shall be
  - Proximal
  - Distal
  - Intercalary
  - Anywhere
- A true fruit is the one where
  - Only ovary of the flower develops into fruit
  - Ovary and calyx of the flower develops into fruit
  - Ovary, calyx and thalamus of the flower develops into fruit
  - All floral whorls of the flower develops into fruit

**CHAPTER : 5****TAXONOMY AND SYSTEMATIC BOTANY****04 x 1 = 04**

- Phylogenetic classification is the most favoured classification because it reflects
  - Comparative Anatomy
  - Number of flowers produced
  - Comparative cytology
  - Evolutionary relationships
- The taxonomy which involves the similarities and dissimilarities among the immune system of different taxa is termed as
  - Chemotaxonomy
  - Molecular systematics
  - Serotaxonomy
  - Numerical taxonomy
- Perianth is present in
  - Clitoria ternatea*
  - Datura metal*
  - Allium cepa*
  - Pongamia pinnata*
- Flowers are zygomorphic in
  - Ceropegia*
  - Thevetia*
  - Datura*
  - Solanum*

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**CHAPTER : 6****CELL : THE UNIT OF LIFE****05 x 1 = 05**

- The two subunits of ribosomes remain united at critical ion level of
  - Magnesium
  - Calcium
  - Sodium
  - Ferrous
- Sequences of which of the following is used to know the phylogeny.
  - mRNA
  - rRNA
  - tRNA
  - Hn RNA
- Many cells function properly and divide mitotically even though they do not have.
  - Plasma membrane
  - cytoskeleton
  - mitochondria
  - Plastids
- Keeping in view the fluid mosaic model for the structure of cell membrane, which one of the following statements is correct with respect to the movement of lipids and proteins from one lipid monolayer to the other.
  - Neither lipid nor proteins can flip-flop
  - Both lipid and proteins can flip flop
  - While lipids can rarely flip-flop proteins cannot
  - While proteins can flip-flop lipids cannot
- Match the columns and identify the correct option:

Column-I	Column-II
(a) Thylakoids	(i) Disc-shaped sacs in Golgi apparatus
(b) Cristae	(ii) Condensed structure of DNA
(c) Cisternae	(iii) Flat membranous sacs in stroma
(d) Chromatin	(iv) Infoldings in mitochondria

	(a)	(b)	(c)	(d)
(1)	(iii)	(iv)	(ii)	(i)
(2)	(iv)	(iii)	(i)	(ii)
(3)	(iii)	(iv)	(i)	(ii)
(4)	(iii)	(i)	(iv)	(ii)

**CHAPTER : 7****CELL CYCLE****09 x 1 = 09**

- The correct sequence in cell cycle is
  - S-M-G1-G2
  - S-G1-G2-M
  - G1-S-G2-M
  - M-G-G2-S
- If mitotic division is restricted in G1 phase of the cell cycle then the condition is known
  - S Phase
  - G2 Phase
  - M Phase
  - G0 Phase

3. Anaphase promoting complex APC is a protein degradation machinery necessary for proper mitosis of animal cells. If APC is defective in human cell, which of the following is expected to occur?
  - a. Chromosomes will be fragmented
  - b. Chromosomes will not condense
  - c. Chromosomes will not segregate
  - d. Recombination of chromosomes will occur
4. In S phase of the cell cycle
  - a. Amount of DNA doubles in each cell
  - b. Amount of DNA remains same in each cell
  - c. Chromosome number is increased
  - d. Amount of DNA is reduced to half in each cell
5. Centromere is required for
  - a. transcription
  - b. crossing over
  - c. Cytoplasmic cleavage
  - d. movement of chromosome towards pole
6. Synapsis occur between
  - a. mRNA and ribosomes
  - b. spindle fibres and centromeres
  - c. two homologous chromosomes
  - d. a male and a female gamete
7. In meiosis crossing over is initiated at
  - a. Diplotene
  - b. Pachytene
  - c. Leptotene
  - d. Zygotene
8. Colchicine prevents the mitosis of the cells at which of the following stage
  - a. Anaphase
  - b. Metaphase
  - c. Prophase
  - d. interphase
9. The pairing of homologous chromosomes on meiosis is known as
  - a. Bivalent
  - b. Synapsis
  - c. Disjunction
  - d. Synergids

**CHAPTER : 8****BIO MOLECULES****05 x 1 = 05**

1. Water is a polar molecule because..
  - a) They have uniform charge distribution.
  - b) They have negative charge.
  - c) The hydrogen have slight negative charge.
  - d) They have uneven distributions of electrical charge.
2. The  $\beta$  - D Glucose units in cellulose are linked together by
  - a) N-acetyl side chains.
  - b) N-acetyl D-glucosamine.
  - c) 1 3 Linkage
  - d)  $\beta$  - (1,4) glycosidic linkage
3. Chitin is a linear polymer of \_\_\_\_\_ joined together by  $\beta$  - 1,4 glycosidic linkages.
  - a)  $\beta$  - D - glucose units
  - b) N - acetyl - D Glucosamine units
  - c)  $\alpha$  -1,4 - glucanmaltolase
  - d) D - glycuronic acid

4. The net charge of Zwitter ion is...

- a) Zero                      b) Positive                      c) Negative                      d) 100

5. Watson and Crick model of DNA double helix is \_\_\_\_\_ form.

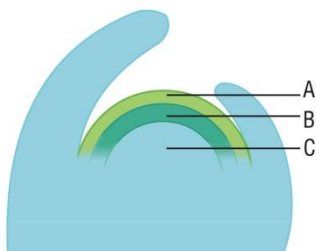
- a) A                              b) C                              c) H                              d) B

## CHAPTER : 9

## TISSUE AND TISSUE SYSTEM

05 x 1 = 05

1. Refer to the given figure and select the correct statement.



i. A, B, and C are histogen of shoot apex

ii. A Gives rise to medullary rays.

iii. B Gives rise to cortex

iv. C Gives rise to epidermis

- a. i and ii only                      b. ii and iii only                      c. i and iii only                      d. iii and iv only

2. Read the following sentences and identify the correctly matched sentences.

i. In exarch condition, the protoxylem lies outside of metaxylem.

ii. In endarch condition, the protoxylem lie towards the centre.

iii. In centarch condition, metaxylem lies in the middle of the protoxylem.

iv. In mesarch condition, protoxylem lies in the middle of the metaxylem.

- a. i, ii and iii only                      b. ii, iii and iv only                      c. i, ii and iv only                      d. All of these

3. Bicollateral vascular bundles are present in.

- a. Cucurbitaceae                      b. Liliaceae                      c. *Dracena*                      d. *Yucca*

4. When a leaf trace extends from a vascular bundle in a dicot stem, what would be the arrangement of

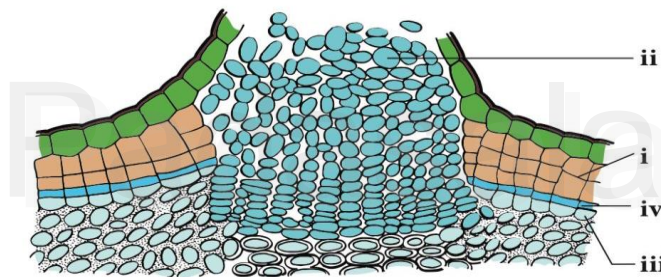
- a. Xylem would be on top and the phloem on the bottom  
b. Phloem would be on top and the xylem on the bottom  
c. Xylem would encircle the phloem  
d. Phloem would encircle the xylem

5. Grafting is successful in dicots but not in monocots because the dicots have

- a. Vascular bundles arranged in a ring                      b. Cambium for secondary growth  
c. Vessels with elements arranged end to end                      d. Cork cambium

**CHAPTER : 10****SECONDARY GROWTH****04 x 1 = 04**

1. Consider the following statements In spring season vascular cambium
  - i. is less active
  - ii. produces a large number of xylary elements
  - iii. forms vessels with wide cavities of these,
  - a. (i) is correct but (ii) and (iii) are not correct
  - b. (i) is not correct but (ii) and (iii) are correct
  - c. (i) and (ii) are correct but (iii) is not correct
  - d. (i) and (ii) are not correct but (iii) is correct.
2. Usually, the monocotyledons do not increase their girth, because
  - a. They possess actively dividing cambium
  - b. They do not possess actively dividing cambium
  - c. Ceases activity of cambium
  - d. All are correct
3. In the diagram of lenticel identify the parts marked as i, ii, iii, iv



- a. i. phellem, ii. Complementary tissue, iii. Phelloderm, iv. Phellogen.
  - b. i. Complementary tissue, ii. Phellem, iii. Phellogen, iv. Phelloderm.
  - c. i. Phellogen, ii. Phellem, iii. Phelloderm, iv. complementary tissue
  - d. i. Phelloderm, ii. Phellem, iii. Complementary tissue, iv. Phellogen
4. What is the fate of primary xylem in a dicot stem showing extensive secondary growth?
    - a. It is retained in the centre of the axis
    - b. It gets crushed
    - c. May or may not get crushed
    - d. It gets surrounded by primary phloem

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**CHAPTER : 11****TRANSPORT IN PLANTS****05 x 1 = 05**

1. In a fully turgid cell
  - a. DPD = 10 atm; OP = 5 atm; TP = 10 atm
  - b. DPD = 0 atm; OP = 10 atm; TP = 10 atm
  - c. DPD = 0 atm; OP = 5 atm; TP = 10 atm
  - d. DPD = 20 atm; OP = 20 atm; TP = 10 atm
2. Which among the following is correct?
  - i. apoplast is fastest and operate in nonliving part
  - ii. Transmembrane route includes vacuole
  - iii. symplast interconnect the nearby cell through plasmadesmata
  - iv. symplast and transmembrane route are in living part of the cell
  - a. i and ii
  - b. ii and iii
  - c. iii and iv
  - d. i, ii, iii, iv
3. What type of transpiration is possible in the xerophyte *Opuntia*?
  - a. Stomatal
  - b. Lenticular
  - c. Cuticular
  - d. All the above
4. Stomata of a plant open due to
  - a. Influx of  $K^+$
  - b. Efflux of  $K^+$
  - c. Influx of  $Cl^-$
  - d. Influx of  $OH^-$
5. Munch hypothesis is based on
  - a. Translocation of food due to TP gradient and imbibition force
  - b. Translocation of food due to TP
  - c. Translocation of food due to imbibition force
  - d. None of the above

**CHAPTER : 12****MINERAL NUTRITION****05 x 1 = 05**

1. Identify correct match.
 

1. Die back disease of citrus	-	(i) Mo
2. Whip tail disease	-	(ii) Zn
3. Brown heart of turnip	-	(iii) Cu
4. Little leaf	-	(iv) B

  - a. 1 (iii)      2 (ii)      3 (iv)      4 (i)
  - b. 1 (iii)      2 (i)      3 (iv)      4 (ii)
  - c. 1 (i)      2 (iii)      3 (ii)      4 (iv)
  - d. 1 (iii)      2 (iv)      3 (ii)      4 (i)



2. If a plant is provided with all mineral nutrients but, Mn concentration is increased, what will be the deficiency?
- Mn prevent the uptake of Fe, Mg but not Ca
  - Mn increase the uptake of Fe, Mg and Ca
  - Only increase the uptake of Ca
  - Prevent the uptake Fe, Mg, and Ca
3. The element which is not remobilized?
- Phosphorous
  - Potassium
  - Calcium
  - Nitrogen
4. Match the correct combination.

Minerals		Role	
A	Molybdenum	1.	Chlorophyll
B	Zinc	2.	Methionine
C	Magnesium	3.	Auxin
D	Sulphur	4.	Nitrogenase

a.	A-1	B-3	C-4	D-2
b.	A-2	B-1	C-3	D-4
c.	A-4	B-3	C-1	D-2
d.	A-4	B-2	C-1	D-3

5. Identify the correct statement
- Sulphur is essential for amino acids Cystine and Methionine
  - Low level of N, K, S and Mo affect the cell division
  - Non-leguminous plant *Alnus* which contain bacterium *Frankia*
  - Denitrification carried out by nitrosomonas and nitrobacter.
- I, II are correct
  - I, II, III are correct
  - I only correct
  - all are correct

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**CHAPTER : 13****PHOTOSYNTHESIS****05 x 1 = 05**

**1. Assertion (A):** Increase in Proton gradient inside lumen responsible for ATP synthesis

**Reason (R) :** Oxygen evolving complex of PS I located on thylakoid membrane facing Stroma, releases  $H^+$  ions

- Both Assertion and Reason are True.
  - Assertion is True and Reason is False.
  - Reason is True and Assertion is False.
  - Both Assertion and Reason are False.
2. Which chlorophyll molecule does not have a phytol tail?
- Chl- a
  - Chl-b
  - Chl- c
  - Chl -d
3. The correct sequence of flow of electrons in the light reaction is
- PS II, plastoquinone, cytochrome, PS I, ferredoxin.
  - PS I, plastoquinone, cytochrome, PS II ferredoxin.
  - PS II, ferredoxin, plastoquinone, cytochrome, PS I.
  - PS II, plastoquinone, cytochrome, PS II, ferredoxin.
4. For every  $CO_2$  molecule entering the C3 cycle, the number of ATP & NADPH required
- 2ATP 1 2NADPH
  - 2ATP 1 3NADPH
  - 3ATP 1 2NADPH
  - 3ATP 1 3NADPH
5. Identify true statement regarding light reaction of photosynthesis.
- Splitting of water molecule is associate with PS I.
  - PS I and PS II involved in the formation of NADPH $H^+$ .
  - The reaction center of PS I is Chlorophyll a with absorption peak at 680 nm.
  - The reaction center of PS II is Chlorophyll a with absorption peak at 700 nm.

**CHAPTER : 14****RESPIRSTION****05 x 1 = 05**

1. The number of ATP molecules formed by complete oxidation of one molecule of pyruvic acid is
- 12
  - 13
  - 14
  - 15
2. During oxidation of two molecules of cytosolic NADH  $H^+$ , number of ATP molecules produced in plants are
- 3
  - 4
  - 6
  - 8
3. The compound which links glycolysis and Krebs cycle is
- Succinic acid
  - Pyruvic acid
  - Acetyl CoA
  - Citric acid
4. **Assertion (A):** Oxidative phosphorylation takes place during the electron transport chain

in mitochondria.

**Reason (R):** Succinyl CoA is phosphorylated into succinic acid by substrate phosphorylation.

- A and R is correct. R is correct explanation of A
  - A and R is correct but R is not the correct explanation of A
  - A is correct but R is wrong
  - A and R is wrong.
5. Which of the following reaction is not involved in Krebs cycle.
- Shifting of phosphate from 3C to 2C
  - Splitting of Fructose 1,6 bisphosphate of into two molecules 3C compounds.
  - Dephosphorylation from the substrates
  - All of these

## CHAPTER : 15

## PLANT GROWTH AND DEVELOPMENT

05 x 1 = 06

- Select the wrong statement from the following:
  - Formative phase of the cells retain the capability of cell division.
  - In elongation phase development of central vacuole takes place.
  - In maturation phase thickening and differentiation takes place.
  - In maturation phase, the cells grow further.
- If the diameter of the pulley is 12 inches, length of pointer is 10 inches and distance travelled by pointer is 5 inches. Calculate the actual growth in length of plant.
 

a. 3 inches	b. 6 inches	c. 12 inches	d. 30 inches
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- \_\_\_\_\_ is the powerful growth inhibitor
 

a. Ethanol	b. Cytokinins	c. ABA	d. Auxin
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- Select the correctly matched one
 

A) Human urine	i) Auxin	-B
B) Corn gram oil	ii) GA3	
C) Fungus	iii) Absciscic acid	II
D) Herring fish	iv) Kinitin	sperm
E) Unripe maize	v) Auxin	A grains
F) Young cotton	vi) Zeatin	bolts

a) A-iii, B-iv, C-v, D-vi, E-i, F-ii,	b) A-v, B-i, C-ii, D-iv, E-vi, F-iii,
c) A-iii, B-v, C-vi, D-i, E-ii, F-iv,	d) A-ii, B-iii, C-v, D-vi, E-iv, F-i

5. Seed dormancy allows the plants to
- a. overcome unfavourable climatic conditions
  - b. develop healthy seeds
  - c. reduce viability
  - d. prevent deterioration of seeds
6. Which one of the following method are used to break the seed dormancy?
- a) Scarification
  - b) Impaction
  - c) Stratification
  - d) All the above.

**Wish by,**

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