

BIO - BOTANY

PREPARED BY

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PG ASST IN BOTANY,

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01. LIVING WORLD

EVALUATION:

1. Which one of the following statements about virus is correct?

- a. Possess their own metabolic system b. They are facultative parasitesc. 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 Floridian 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

2. PLANT KINGDOM

Evaluation

1. Which of the plant group has gametophyte as a dominant phase?

- a. Pteridophytes b. Bryophytes c. Gymnosperm d. Angiosperm

2. Which of following represents gametophytic generation in pteridophytes?

- a. Prothallus b. Thallus c. Cone d. Rhizophore

3. The haploid number of chromosome for an angiosperm is 14, the number of chromosome in its endosperm would be

- a. 7 b. 14 c. 42 d. 28

4. Endosperm in gymnosperm is formed

- a. At the time of fertilization b. Before fertilization
c. After fertilization d. Along with the development of embryo

II. 03. VEGETATIVER MORPHOLOGY

EVALUATION

1. Which of the following is polycarpic plant?

- a. *Mangifera* b. *Bambusa* c. *Musa* d. *Agave*

2. Roots are

- a. Descending, negatively geotropic, positively phototropic
b. Descending, positively geotropic, negatively phototropic
c. Ascending, positively geotropic, negatively phototropic
d. Ascending, negatively geotropic, positively phototropic

3. *Bryophyllum* and *Dioscorea* are example for

- a. Foliar bud, apical bud b. Foliar bud, cauline bud
c. Cauline bud, apical bud d. Cauline bud, foliar bud

4. Which of the following is the correct statement?

- a. In *Pisum sativum* leaflets modified into tendrils
b. In *Atalantia* terminal bud is modified into thorns
c. In *Nepenthes* midrib is modified into lid
d. In *Smilax* inflorescence axis is modified into tendrils

5. Select the mismatch pair

- a. *Musa* - Unicostate
b. *Lablab* - Trifoliolate
c. *Acalypha* - Leaf mosaic
d. *Allamanda* - Ternate phyllotaxy.

II. 04. REPRODUCTIVE MORPHOLOGY

Evaluation

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

III. 05. TAXONOMY AND SYSTEMATIC BOTANY

Evaluation

- 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 ternatia
 - Datura metal
 - c.Allium cepa
 - Pongamia pinnata.
- Flowers are zygomorphic in
 - Ceropegia
 - Thevetia
 - Datura
 - Solanum.

III.06. CELL: THE UNIT OF LIFE.

- 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
Thylakoids	(i) Disc-shaped sacs in Golgi apparatus
Cristae	(ii) Condensed structure of DNA
Cisternae	(iii) Flat membranous sacs in stroma
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) |

II. 07.CELL CYCLE.

Evaluation.

- The correct sequence in cell cycle
a.S-M-G1-G2 b. S-G1-G2-M c. G1-S-G2-M d. M-G-G2-S
- If mitotic division is restricted in G1 phase of the cell cycle then the condition is known as
a. S Phase b. G2 Phase c.M Phase d. G0 Phase.
- Anaphase promoting complex APC is a protein degradation machinery necessary for proper mitosis of animal cells.APC is defective in human cell,which of 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.
- 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.
- Centromere is required for :
a.transcription b.crossingover
c.cytoplasmic cleavage. d.movement of chromosome towards pole
- Synapsis occur between
a. mRNA and ribosomes b. spindle fibers and centromeres
c. two homologous chromosomes d. a male and a female gamete
- In meiosis crossing over is initiated at
a. Diplotene b. Pachytene c. Leptotene d. Zygotene
- Colchicine prevents the mitosis of the cells at which of the following stage
a. Anaphase b. Metaphase c. Prophase d. interphase
- The pairing of homologous chromosomes on meiosis is known as
a. Bivalent b. Synapsis c. Disjunction d. Synergids.

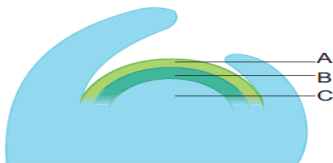
08. BIOMOLECULES.

- Water is a polar molecule because
a. They have uniform charges distribution b. They have negative charges
c. The hydrogen have slight negative charges
d. They have uneven distribution of electric charges.
- β -glucose units in cellulose are linked together by.
a. N- acetyl side chain b.N- acetyl D glucosamine
c. 1---- 3 Linkage d. β -1,4 glycosidic linkage.
- Chitin is a polymer of Join together by β -1,4 glycosidic linkages
a. β - - glucose units b. N- acetyl – D glucosamine units
c. α -1,4- Glucan maltohydrolase D. d. D –glucuronic acid..
- The net charges of Zwitter ions is
a. zero b. positive c. negative d. 100
- Watson and crick model fo Dna double helix is -----form.
a. A b. C c. H d. B.

09. TISSUE AND TISSUE SYSTEM.

BOOK BACK QUESTION.

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

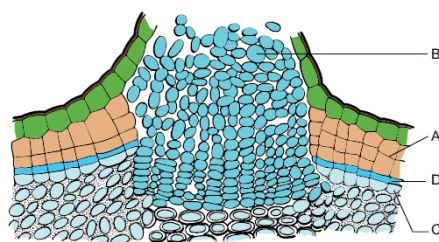


- i. A, B, and C are histogen of shoot apex ii. A Gives rise to medullary rays.
 iii. B Gives rise to cortex iv. C Gives rise to epidermis.
- a. i and ii only b. ii and iii only c. i and iii only d. iii and iv only
2. Read the following sentences and identify the correctly matched sentences.
- i. In 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 vascular tissues in the veins of the leaf?
- 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

10. SECONDARY GROWTH

BOOK BACK QUESTION.

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 A, B, C, D



- A. phellem, B. Complementary tissue, C. Phellogen, D. Phellogen.
- A. Complementary tissue, B. Phellem, C. Phellogen, D. Phellogen.
- A. Phellogen, B. Phellem, C. Phellogen, D. complementary tissue
- A. Phellogen, B. Phellem, C. Complementary tissue, D. Phellogen.

4. What is the fate of primary xylem in a dicot root showing extensive secondary growth?

- It is retained in the center of the axis
- It gets crushed.
- May or may not get crushed
- It gets surrounded by primary phloem

11. TRANSPORT IN PLANTS.

Book back question:

1. In a fully turgid cell

- DPD = 10 atm; OP = 5 atm; TP = 10 atm
- DPD = 0 atm; OP = 10 atm; TP = 10 atm
- DPD = 0 atm; OP = 5 atm; TP = 10 atm
- DPD = 20 atm; OP = 20 atm; TP = 10 atm.

2. Which among the following is correct?

- apoplast is fastest and operate in nonliving part
 - Transmembrane route includes vacuole
 - symplast interconnect the nearby cell through plasmodesmata
 - symplast and transmembrane route are in living part of the cell
- i and ii
 - ii and iii
 - iii and iv
 - i, ii, iii, iv

3. What type of transpiration is possible in the xerophyte *Opuntia*?

- Stomatal
- Lenticular
- Cuticular
- All the above

4. Stomata of a plant open due to

- Influx of K^+
- Efflux of K^+
- Influx of Cl^-
- Influx of OH^-

5. Munch hypothesis is based on

- Translocation of food due to TP gradient and imbibition force
- Translocation of food due to TP
- Translocation of food due to imbibition force. D. None of the above.

12. MINERAL NUTRITION.

BOOK BACK QUESTIONS:

1. Identify correct match.

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

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

- b. Mn increase the uptake of Fe, Mg and Ca
- c. Only increase the uptake of Ca
- d. Prevent the uptake Fe, Mg, and Ca

3. The element which is not remobilized?

- a. Phosphorous b. Potassium c. Calcium d. 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

- i. Sulphur is essential for amino acids Cystine and Methionine
- ii. Low level of N, K, S and Mo affect the cell division
- iii. Non-leguminous plant *Alnus* which contain bacterium *Frankia*
- iv. Denitrification carried out by *Nitrosomonas* and *Nitrobacter*.
- a. I, II are correct b. I, II, III are correct
- c. I only correct d. all are correct

13. PHOTOSYNTHESIS

BOOK BACK QUESTIONS:

- I. 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
 - a. Both Assertion and Reason are True. b. Assertion is True and Reason is False.
 - c. Reason is True and Assertion is False. d. Both Assertion and Reason are False.
2. Which chlorophyll molecule does not have a phytol tail?
 - a. Chl- a b. Chl- b c. Chl- c d. Chl -d
3. The correct sequence of flow of electrons in the light reaction is
 - a. PS II, plastoquinone, cytochrome, PSI, ferredoxin.
 - b. PS I, plastoquinone, cytochrome, PSII ferredoxin.
 - c. PS II, ferredoxin, plastoquinone, cytochrome, PS I.
 - d. PS I, plastoquinone, cytochrome, PSII, ferredoxin.
4. For every CO_2 molecule entering the C_3 cycle, the number of ATP & NADPH required
 - a. 2ATP + 2NADPH b. 2ATP + 3NADPH c. 3ATP + 2NADPH d. 3ATP + 3NADPH
5. Identify true statement regarding light reaction of photosynthesis?
 - a. Splitting of water molecule is associate with PS I.
 - b. PS I and PS II involved in the formation of $NADPH + H^+$.
 - c. The reaction center of PS I is Chlorophyll a with absorption peak at 680 nm.
 - d. The reaction center of PS II is Chlorophyll a with absorption peak at 700nm

14. RESPIRATION

BOOK BACK QUESTIONS:

1. The number of ATP molecule formed by complete oxidation of one molecule of Pyruvic acid is: a. 12 b. 13 c. 14 d. 15
2. During oxidation of two molecules of cytosolic NADH + H⁺, number of ATP molecules produced in plants are a. 3 b. 4 c. 6 d. 8
3. The compound which links glycolysis and Krebs cycle are a. succinic acid b. pyruvic acid c. acetyl CoA d. citric acid
4. a. A and R is 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.
correct. R is correct explanation of A
b. A and R is correct but R is not the correct explanation of A
c. A is correct but R is wrong
d. A and R is wrong.
5. Which of the following reaction is not involved in Krebs cycle.
a. Shifting of phosphate from 3C to 2C. b. Splitting of Fructose 1,6 bisphosphate of into two molecules 3C Compounds.
c. Dephosphorylation from the substrates
d. All of these

15. PLANT GROWTH AND DEVELOPMENT

1. Select the wrong statement from the following:
 - a. Formative phase of the cells retain the capability of cell division.
 - b. In elongation phase development of central vacuole takes place.
 - c. In maturation phase thickening and differentiation takes place.
 - d. In maturation phase, the cells grow further.
2. If the diameter of the pulley is 6 inches, length of pointer is 10 inches and distance travelled by pointer is 5 inches. Calculate the actual growth in length of plant.
a. 1.5 inches b. 6 inches c. 12 inches d. 30 inches
3. ----- is the powerful growth inhibitor
a. Ethanol b. Cytokinin c. ABA d. Auxin.
4. 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 sperm	iv) Kinetin
E) Unripe maize grains	v) Auxin A
F) Young cotton bolls	vi) Zeatin

 - 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 unfavorable climatic conditions b. develops healthy seeds
 - c. reduce viability d. prevents deterioration of seeds.
6. Which of the following method are used to break the seed dormancy?
 - a. Scarification b. Impaction c. Stratification d. All the above.