HIGHER SECONDARY FIRST YEAR BIO-BOTANY

BOOK BACK ONE MARKS QUESTION AND ANSWERS

LESSON: 1

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 Archaebacterium**
   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

LESSON: 2

1. **Which of the plant group has gametophyte as a dominant phase**
   a. Pteridophytes **b. Bryophytes** c. Gymnosperm d. Angiosperm
2. **Which of following represent 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

LESSON: 3

1. **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
2. **When the root is thick and fleshy, but does not take a definite shape, it said to be**
   a. Nodulose root **b. Tubercular root** c. Moniliform root d. Fasciculated root
3. **Example for negatively geotropic roots**
   a. *Ipomoea, Dahlia* b. *Asparagus, Ruellia* c. *Vitis, Portulaca* **d. *Avicennia, Rhizophora***
4. ***Curcuma amada, Curcuma domestica, Asparagus, Maranta* are example of**
   a. Tuberous root b. Beaded root c. Moniliform root **d. Nodulose root**
5. ***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

LESSON: 4

1. **Vexillary aestivation is characteristic of the family**
   a. Fabaceae b. Asteraceae c. Solanaceae d. Brassicaceae

2. Gynoecium with united carples is termed as
a. Apocarpous b. Multicarpellary **c. Syncarpous** d. None of the above

3. Aggregate fruit develops from
a. Multicarpellary, apocarpous ovary b. Multicarpellary, syncarpous ovary
c. Multicarpellary ovary d. Whole inflorescence

4. 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

5. 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. Overy, calyx and thalamus of the flower develops into fruit
d. All floral whorls of the flower develops into fruit

LESSON: 5

1. Specimen derived from non-original collection serves as the nomenclatural type, when original specimen is missing. It is known as
a. Holotype **b. Neotype** c. Isotype d. Paratype

2. Phylogenetic classification is the most favoured classification because it reflects
a. Comparative Anatomy b. Number of flowers produced
c. Comparative cytology **d. Evolutionary relationships**

3. The taxonomy which involves the similarities and dissimilarities among the immune system of different taxa is termed as
a. Chemotaxonomy b. Molecular systematic **c. Serotaxonomy** d. Numerical taxonomy

4. Which of the following is a flowering plant with nodules containing filamentous nitrogen fixing micro - organisms?
a. *Crotalaria juncea* b. *Cycas revoluta* c. *Cicer arietinum* **d. *Casuarina equisetifolia***

5. Flowers are zygomorphic in
a. *Ceropegia* b. *Thevetia* **c. *Datura*** d. *Solanum*

LESSON: 6

1. The two subunits of ribosomes remain united at critical ion level of
a. Magnesium b. Calcium c. Sodium d. Ferrous

2. Sequences of which of the following is used to know the phylogeny
a. mRNA **b. rRNA** c. tRNA d. Hn RNA

3. Many cells function properly and divide mitotically even though they do not have
a. Plasma membrane b. cytoskeleton c. mitochondria **d. Plastids**

4. 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
a. Neither lipid nor proteins can flip-flop b. Both lipid and proteins can flip flop
c. While lipids can rarely flip-flop proteins cannot d. While proteins can flip-flop lipids cannot

LESSON:7

1. The correct sequence in cell cycle is
a. S-M-G1-G2 b. S-G1-G2-M **c. G1-S-G2-M** d. M-G-G2-S

2. If cell 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**

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 paring of homologous chromosomes on meiosis is known as
a. Bivalent **b. Synapsis** c. Disjunction d. Synergids

10. Anastral mitosis is the characteristic feature of
a. Lower animals b. Higher animals **c. Higher plants** d. All living organisms.

LESSON: 8

1. The most basic amino acid is
a. Arginine b. Histidine c. Glycine d. Glutamine

2. An example of feedback inhibition is
a. Cyanide action on cytochrome
b. Sulpha drug on folic acid synthesiser bacteria
c. Allosteric inhibition of hexokinase by glucose-6-phosphate
d. The inhibition of succinic dehydrogenase by malonate

3. Enzymes that catalyse interconversion of optical, geometrical or positional isomers are
a. Ligases b. Lyases **c. Hydrolases** d. Isomerases

4. Proteins perform many physiological functions. For example some functions as enzymes. One of the following represents an additional function that some proteins discharge.
a. Antibiotics b. Pigment conferring colour to skin
c. Pigments making colours of flowers **d. Hormones**

LESSON: 9

1. Refer to the given figure and select the correct statement
i. A, B, and C are histogen of shoot ape 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 towords 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. In Gymnosperms, the activity of sieve tubes are controlled by

a. Nearby sieve tube members. b. Phloem parenchyma cells

c. Nucleus of companion cells. d. Nucleus of albuminous cells.

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

LESSON: 10

1. Consider the following statementsIn 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. A. phellem, B. Complementary tissue, C. Phelloderm, D. Phellogen.

b. A. Complementary tissue,B. Phellem, C. Phellogen,D. Phelloderm.

c. A. Phellogen, B. Phellem,C. Phelloderm, D. complementarytissue

d. A. Phelloderm, B. Phellem,C. Complementary tissue,D. Phellogen

4. The common bottle cork is a product of

a. Dermatogen b. Phellogen c. Xylem **d. Vascular cambium**

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

a. It is retained in the center of the axis **b. It gets crushed**

LESSON: 11

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

LESSON:12

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?

a. 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.

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 whichcontain 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

LESSON:13

1. **Assertion (A):** Increasein Proton gradient inside lumen responsible for ATP synthesis
Reason (R): Oxygen evolving complex of PS I located on thylakoid membrane facing Stroma, releases H1 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, PS I, ferredoxin.
b. PS I, plastoquinone, cytochrome, PS II ferredoxin.
c. PS II, ferredoxin, plastoquinone, cytochrome, PS I.
d. PS I, plastoquinone, cytochrome, PS II, ferredoxin.

4. For every CO2 molecule entering the C3 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 NDPH1H1.
c. The reaction center of PS I is Chlorophyll a with absorption peakat 680 nm.
d. The reaction center of PS II is Chlorophyll a with absorption peakat 700 nm.

LESSON:14

1. The number of ATP molecules 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 1 H1, 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 is

a. succinic acid b. pyruvic acid **c. acetyl CoA** d. 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. A and R is 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

LESSON: 15

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 growfurther.

2. If the diameter of the pulley is 6 inches, length of pointer is 10 inchesand distance travelled by pointer is 5 inches. Calculate the actual growthin length of plant.

a. 3inches b. 6 inches c. 12 inches d. 30 inches

3. In unisexual plants, sex can be changed by the application of

a. Ethanol

b. Cytokinins

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) Abscisic acid II
D) Herring fish	iv) Kinitin sperm
E) Unripe maize	v) Auxin A grains
F) Young cotton	vi) Zeatinbolls

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 climaticconditions

b. develop healthy seeds

c. reduce viability

d. prevent deterioration of seeds.