

BOTANY B.Sc II

1. Which can function as carriers in active ion absorption.
a) cytochrome b) ferredoxin c) Plastoquinone d) Lecithin ✓
2. Conversion of Ammonia to nitrite by microbe is:
a) Nitrification b) Nitrogen fixation c) Eutrophication d) Denitrification
3. Chlorophyll is soluble in:
a) water b) organic solvents c) Both A & B d) None of the above.
4. Non cyclic Photophosphorylation differs from cyclic Photophosphorylation in that the latter has:
a) Only PSI b) Evolution of oxygen c) Reduction of NADP+
d) Both B and C.
5. In C_2 plants, first CO_2 acceptor enzyme is.
a) PEPco, b) RuBP carboxylase / Rubisco, c) RuBP oxygenase d) Oxidase.
6. PEP, the first CO_2 acceptor in C4 cycle is.
a) 3 carbon compound b) 4-carbon compound c) 5-carbon compound d) 6-carbon compound.
7. The sequential order in electron transport from PS II to PSI of photosynthesis is.
a) P680, P680, P680, and cytochrome, b) P680, P680, cytochromes, P680,
c) P680, cytochromes, P680 and P680, d) P680, cytochromes, P680.
8. Optimum temperature for photosynthesis is
a) $35^{\circ} - 40^{\circ}C$, b) $10^{\circ} - 15^{\circ}C$, c) $25^{\circ} - 35^{\circ}C$ d) $20^{\circ} - 25^{\circ}C$ ✓
9. Choose the correct combination of labelling:
A. mesophyll cell, Bundle sheath cell, Regeneration, Fixation, Decarboxylation,
B. Bundle sheath cell, mesophyll cell, Fixation, Regeneration, Decarboxylation.
C. mesophyll cell, Bundle sheath cell, Decarboxylation, Fixation, Regeneration.
D. ✓ mesophyll cell, bundle sheath cell, Fixation, Regeneration, Decarboxylation.

10) The first pentose sugar formed in PPP of respiration is -
a) Ribulose 5-Phosphate b) Ribose 5-Phosphate c) Xylulose 5-Phosphate

11) Which is not formed during anaerobic respiration.
a) Pyruvate b) Ethyl alcohol c) CO_2 d) Acetyl CoA.

12) members of electron transport chain of respiration are present in:

- a) mitochondrial matrix, b) Inter membrane space.
- c) Inner mitochondrial membrane d) Outer mitochondrial membrane.

13) formation of ATP in respiration is called.

- a) Photophosphorylation, b) Substrate Phosphorylation
- c) Oxidative phosphorylation d) Phosphorylation.

14) A complex enzyme system of mitochondria functional outside Krebs cycle is -

- a) Pyruvate kinase, b) Endoplasmic c) Pyruvate dehydrogenase
- d) α -ketoglutarate dehydrogenase.

15) Hydration reaction occurs in Krebs cycle during conversion of -

- a) Acetyl CoA to citric acid, b) α -ketoglutarate to succinyl CoA
- c) Succinate to fumarate d) fumarate to malate.

16) R.Q. stands for:

- a) Resistance coefficient, b) Replicase conc. c) Respiratory quotient
- d) Reticular conc.

17) Phosphorylation of glucose with the help of ATP and hexokinase produces.

- a) Glucose-1-phosphate, b) Glucose 6-phosphate
- c) Glucose 1,6-bisphosphate, d) fructose, 1-6-bisphosphate

18) Clinostat is the apparatus used to

- a) measure the rate of growth in plant.
- b) measure the quantity of auxin in plant.
- c) measure the effect of light on plant.
- d) eliminate the effect of light gravity or geotropism on plant

19) Thigmotropism is best seen in

- a) Root apex, b) Stem apex, c) Leaf apex, d) Tendrils.

20) Which of the following movement is not related to auxin level.

- a) Bending of shoot towards light, b) movement of root towards soil, c) Nyctinastic leaf movement, d) movement of sunflower head tracking the sun.

21) Internodal elongation is stimulated by.

- a) Auxin, b) Phenol, c) cytokinin, d) Gibberellin.

22) Hormone primarily connected with cell division is:

- a) IAA, b) NAA, c) Cytokinin/zeatin, d) Gibberellic Acid.

23) Vernalization is.

- a) Growth curve related to light,
b) Effect of photoperiods on plant growth.
c) ✓ Speeding up ability to flower by low temp. treatment.
d) Diurnal photoperiodicity.

24) Richmond-Lang Effect is due to:

- a) Gibberellin, b) Ethylene, c) Auxin, d) Abscisic acid ✓

25) Removal of apical bud results in:-

- a) formation of new apical bud.
b) Elongation of main stem.
c) Death of plant.
d) ✓ formation of lateral branching.

25) Effect of daylength duration on plant development / flowering is:

- a) Phototropism, b) Chemotropism, c) Photonasty,
d) ✓ photoperiodism.

26) IAA precursor is: Tryptophan, leucine, Tyrosine, phenylalanine.

27) Highest auxin conc. occurs:

- A) At growing tips, B) In leaves, C) At base of plant organs, D) In xylem & phloem.

28) In short day plants, flowering is induced by.

- a) Photoperiod less than 12 hrs.
b) Photoperiod below a critical length and interrupted long night.
c) Long night, D) Short photoperiod and interrupted long night.

29) Stomatal closure under stress condition is due to: a) IAA, b) ABA, c) 2-4-D,

30) Development of shoot and roots is determined by-

- a) Cytokinin and auxin ratio, b) Enzymes, c) Temp, d) plant nutrients.

31) Hormone found in liquid endosperm of coconut, coconut milk factor is.

- a) Gibberellin, b) Auxin, c) Ethylene, d) Cytokinin

32) The fungus associated with discovery and source of gibberellin is

- a) *Fusarium oxysporum*, b) *Fusarium solanii*,
c) *Fusarium moniliforme*, d) *Fusarium longipes*.

33) α -amylase synthesis is promoted by:

- a) IAA, b) GA, c) NAA, d) Cytokinin.

34) vein loading of sucrose into companion cell is-

- a) Diffusion, b) Active process, c) mass flow transport,
d) Turgor.

35) most accepted theory of ascent of sap is -

- a) capillarity theory, b) Root pressure theory,
c) Pulsation theory, d) Transpiration Pull theory.

36) In root apoplast path of water transport is through -
a) Cell wall only, b) Cell wall and intercellular spaces,
c) Intercellular spaces, ~~and intercellular spaces~~
d) cell walls and Endodermis.

37) Which ion are responsible for stomatal movement.
a) Ferric, b) Zinc, c) Potassium, d) Sodium.

38) Pressure potential in a plasmolysed cell is -
a) Positive, b) zero, c) Negative, d) Remain same.

39) For a plasmolysed cell which equation is correct -
a) $DPD = OP + TP$, b) $DPD = -TP$, c) $DPD = OP$, d) $DPD = OP - TP$.

40) Phloem sap is mainly made of -
a) water and sucrose, b) water and minerals,
c) oligosaccharides and hormones, d) None.

41) Ability to rise in thin tubes and ability to resist pulling force are respectively -
a) Tensile strength and capillarity,
b) cohesion and adhesion,
c) capillarity and tensile strength,
d) Adhesion and capillarity.

42. Which does not pertain to facilitated transport
a) uphill transport, b) High selectivity, c) Transport saturation,
d) Requirement of specific membrane proteins.

43. In stomatal opening, influx of K^+ is accompanied by efflux of - Na^+ , K^+ , H^+ , Cl^- .

44. Apoplast is the system of adjacent cell wall that is continuous throughout the plant except at the -
a) Plasmodesmata, b) Vessel elements,
c) Casparian strips of Endodermis, d) Tracheids.

45. Active absorption of water by roots from the soil is mainly affected by:

- a) Tension in cell sap due to transpiration
- b) Hydrophobic nature of root hair
- c) Typical tissue organisation
- d) Osmotic conc. of xylem sap.

46. Plasmolysis occurs when cells are kept in

- a) Hypotonic solution, b) Hypertonic solution,
- c) Isotonic solution, d) None.

47. Starch of guard cell is converted into PEP through:

- a) Hydrolysis, b) oxidation, c) Dephosphorylation,
- d) Decarboxylation.

48. Which one is most efficient inhibitor -

- a) Pectin, b) Lignin, c) Cellulose, d) Agar.

49. Oozing out of water drops from injured edges or tips is:

- a) Bleeding, b) Guttation, c) Transpiration, d) Oozation.

50. Which is wrong:

- a) water potential is chemical potential of water
- b) solute potential is always negative.
- c) pressure potential is zero in a flaccid cell.
- d) water potential equals solute potential in a fully turgid cell.

51) Scotoactive movement of stomata is that:

- a) stomata open at night, b) stomata open during day, c) stomata close at night, d) stomata open both during day and night.

52) Wax is Ester of fatty acid with
a) Long chain dihydric alcohol b) Trihydric alcohol
c) Long chain monohydric alcohol d) Short chain monohydric alcohol.

53) A Saturated fatty acid is -
a) with no double bond b) High melting point. c) Low melting point
d) Both A and B.

54) Glycosidic linkage at place of branching in starch and glycogen^{is}
a) α 1-6 b) α 1-4, c) β 1-4 d) β 1-6

55) A globular Protein is -
a) Elastin b) Keratin, c) Collagen d) Albumin.

56) A most abundant organic molecule is.
A) Rubisco B) starch c) cellulose d) chitin

57) Many Enzymes are produced in inactive state called -
a) Allosteric Enzyme b) Enzyme Precursor c) Proenzyme or zymogen d) Both B and C.

58) A non proteinaceous enzyme is -
a) Lysozyme b) Ribozyme c) Ribonuclease-P
d) Both B & C.

59) Which of the following biomolecules does have a phosphodiester bond.
a) fatty acid in a diglyceride b) Monosaccharid in polysaccharide c) Amino acid in polypeptide
d) Nucleotides in Nucleic Acid.

60) An allosteric inhibitor of the enzyme active site by binding to the -
A) Substrate B) Product c) catalytic site of Enzyme
d) Non-catalytic site of Enzyme.

- 61) Which of the following amino acids contain sulphur in its side chain.
 a) Methionine b) Alanine c) Tryptophan d) Phenylalanine
 d) Phenylalanine.
- 62) Linoleic is unsaturated fatty acid whose content is highest in.
 a) Cotton oil b) Sunflower oil c) Coconut oil
 d) Groundnut oil.
- 63) Coenzymes NAD and NADP contain the vitamin -
 a) Niacin b) Biotin c) Thiamine d) Vitamin B₁₂
- 64) Macromolecules chitin is -
 a) Simple Polysaccharide b) Ketone containing polysaccharide
 c) Phosphorus containing polysaccharide
 d) Sulphur containing polysaccharide
- 65) Storage Protein that coagulates on heating but remains soluble in dil. solution is
 a) Globulin b) Albumin c) Histone d) Collagen
- 66) Thermolabile protein part of enzyme is
 a) Apoenzyme b) Proenzyme c) Holoenzyme d) Isoenzyme
- 67) Select the aromatic amino acids: a) Tyrosine, b) Valine
 c) Lysine d) Tryptophan e) Serine.
 A) a and d only b) a, d and e only c) b and d only
 d) c and d only e) a and e only.
- 68) Select the incorrect statement -
 A) Collagen amino acids are substituted methanes.
 B) Glycerol is trihydroxy propane
 C) Lysine is neutral amino acid.
 d) Lecithin is phospholipid.
 e) Adenosine is a nucleoside.

69) Pick out lectin from those given below -

- A) Gum, b) Diterpene, c) curcumin, d) morphine

70) Which one is true for ATP:

- a) ATP is prosthetic group of an enzyme.
b) ATP is a coenzyme c) ATP is an enzyme
d) ATP is the organic ion of enzyme.

71) Prosthetic group of a glycoprotein consist of:

- a) lipids - b) Nucleic Acid c) metal ions d) carbohydrate

72) Which is wrongly matched:

- A) fungi - chitin B) Phospholipid - Plasma membrane
✓ c) Enzyme - Lipopolysaccharide, d) ATP - Nucleotide derivative.

73) Which one is not added in detergents:

- a) amylase, b) protease, c) peptidase, d) cellulase.

74) Which one is water soluble vitamin -

- a) vit A b) vit B, c) vit D, d) vit E

75) Which one is absent in honey:

- a) Glucose b) Lactose c) maltose d) levulose

76) 98% of living organism is formed of six elements carbon, hydrogen, nitrogen, oxygen, and -

- a) S and Mg B) Mg and Na c) P and S d) Ca and P.

77) Silk is obtained from silkworm is a -

- a) fat b) cellulose c) protein, d) carbohydrate

78) In a protein, amino acids are linked by -

- ✓ a) Peptide bonds b) Glycosidic bond c) Hydrogen bond
d) All the above.

- 79) NAD is a) Nicotinamide adenosine diphosphate.
b) Nicotinic adenosine phosphate
✓ c) Nicotinamide adenosine dinucleotide.
d) None of the above.

- 80) Which one promotes softening of fruits -
a) Polygalacturonase b) Polyethylene glycol
c) colchicine d) cellulase.

- 81) Benedict reagent test is conducted to confirm presence of :- a) Protein b) Lipid c) starch, d) Reducing sugar

- 82) Which of the amino acids has hydroxyl in its R-group - a) Serine b) Alanine c) Arginine, d) proline

- 83) Which one is wrong about starch:

- a) Starch is polymer of α glucose
b) It has amylose and amylopectin
c) Amylose is linear with 1,4-glycosidic linkages
d) Amylopectin is straight chain with 1,4 glycosidic linkages.

- 84) Pro catalyst were found accidentally in yeast extract by:

- a) Sumner b) Leube ✓ c) Buchner d) Pasteur

- 85) Key and lock hypothesis of enzyme action was given by:

- ✓ a) Fischer b) Koshland c) Buchner d) Leube.

- 86) An example of feedback inhibition is.

- a) allosteric inhibition of hexokinase by glucose-6-P₄
b) cyanide action on cytochrome
c) Sulpha drug on folic acid synthesis in bacteria
d) Reaction between succinic dehydrogenase and succinic acid.

87) Enzyme required for joining two molecules is
a) lyase b) ~~bractase~~ c) polymerase d) ~~hydrolyase~~

88) Tertiary structure of proteins having amino acid cysteine is achieved through.

- a) Ionic Bonds
- b) Covalent Bonds
- c) ~~disulphide bonds.~~
- d) Hydrogen bonds.

89) Fermentation products of yeast are -

- a) $H_2O + CO_2$
- b) Methyl alcohol + CO_2
- c) methyl alcohol + H_2O .
- d) Ethyl alcohol + CO_2 .

90) Which is water soluble:

- a) ~~Phycocyanin~~
- b) ~~carotene~~
- c) ~~Xanthophyll~~
- d) chlorophyll

91) In photorespiration, glycine passes from:-

- a) chloroplast to peroxisome
- b) chloroplast to mitochondria
- c) ~~Peroxisome to mitochondria~~
- d) ~~mitochondrion to peroxisome.~~

92) Bundle sheath cells:

- a) ~~Lack RUBISCO.~~
- b) ~~lack RUBISCO and PEP Carboxylase~~
- c) Are rich in RUBISCO
- d) ~~Are rich in PEP carboxylase.~~

93) The strong inhibitor substance for Ps II in photosynthesis is -
a) Ethylene b) chloroform c) ~~Dichlorophenyl dimethyl urea~~
d) ~~yellow light.~~

94) Bacteria that convert ammonia to nitrite:

- a) ~~Nitrobacter~~
- b) ~~Nitrosomonas~~
- c) ~~Pseudomonas~~
- d) ~~mycobacte^{ry}~~

95) component of nitrogenase and nitrate reductase is
a) ~~N~~ b) ~~Mo~~ c) ~~Co~~ d) ~~No specific component.~~

96) Denitrification is carried out by:

- a) ~~Pseudomonas and Nitrosococcus~~
- b) ~~Nitrosomonas & Nitrobacter~~
- c) ~~Nitrosomonas and Nitrosococcus~~
- d) pseudomonas and thio bacillus

97) Transpiration is mainly a mass by:

a) Imbibition, b) Respiration, c) osmotic pressure d) Diffusion

98) The force responsible for raising water in 100ft

tall plant is a) transpiration pull b) Root pressure.

c) Air pressure d) capillary action

99) The external solution having same conc. as that of cell

sap is called: a) hypertonic solution b) Isotonic solution

c) Hypotonic d) ultratonic solution

100) op. of a solution can be measured by:

a) photometer b) osmometer c) calorimeter d) plasmolysis

