

Shivaji University, Kolhapur

Question Bank for Mar 2022 (Summer Examination)

Subject Code: 78910 Subject Name: Botany Paper VII

Q. 1 Rewrite the following sentences by choosing the correct alternative.

1. Root part of the plant is derived from_____

- a. plumule
- b. radical
- c. endosperm
- d. scutellum

2. The term protoderm for dermatogens was given by _____

- a. Schmidt
- b. Hanstein
- c. Hofmeister
- d. Haberlandt

3. The apical cell theory was proposed by _____

- a. Schmidt
- b. Hanstein
- c. Hofmeister
- d. Guttenberg

4. Closed vascular bundle in monocot stem lacks_____

- a. xylem
- b. phloem
- c. cambium
- d. water cavities

5. _____ wood have no vessels in xylem tissue

- a. Teak
- b. Mango
- c. Palm
- d. Pinus

6. The radial vascular bundle is the characteristic of _____

- a. stem
- b. leaf
- c. floral bud
- d. root

7. The leptocentric type of vascular bundle, found in _____

- a. Fern rachis
- b. Dracaena stem
- c. Sunflower root
- d. Maize stem

8. The lenticels are involved in _____
- Storage of food
 - Exchange of gaseous
 - Photosynthesis
 - Secretion of resin
9. Adaptive abnormal secondary growth is found in _____ stem
- Yucca
 - Sunflower
 - Dracaena
 - Bignonia
10. Multiple epidermis is found in _____
- Sugarcane leaf
 - Nerium leaf
 - Maize leaf
 - Jowar leaf
11. Latex vessels occur in _____
- Maize
 - Citrus
 - Water lily
 - Hevea
12. Fragrance to flower is due to _____
- digestive glands
 - osmophores
 - laticifers
 - resin ducts
13. Dendroid or tree like hairs found in _____
- Dombeya
 - Olea
 - Viola
 - Mimosa
14. The apical meristem is responsible for _____
- Increasing height
 - Increasing thickness
 - Formation of phloem tissue
 - Formation of xylem tissue
15. The Tunica Corpus theory was proposed by _____
- Hofmeister
 - Hanstein
 - Schmidt
 - Guttenberg

16. The vascular cambium and cork cambium are the examples of _____
- Intercalary meristem
 - Lateral meristem
 - Apical meristem
 - Primary meristem
17. The permanent tissue performs the function of storage of food material is _____
- Parenchyma
 - Sclerenchyma
 - Collenchyma
 - Xylem
18. Outer layer of periderm is called as _____
- Phellem
 - Phellogen
 - Phelloderm
 - Cork cambium
19. Dracaena belongs to family _____
- Dracaenaceae
 - Apiaceae
 - Liliaceae
 - Bignoniaceae
20. Water secreting glands in plants are _____
- Nectaries
 - Digestive glands
 - Hydathodes
 - osmophores
21. Insectivorous plants have _____
- digestive glands
 - osmophores
 - laticifers
 - resin ducts
22. The type of vascular bundle in Dracaena is _____
- Amphicribal
 - Amphivasal
 - Conjoint collateral
 - Open
23. The portion of the plumule between the cotyledons and first photo-synthetic leaf is called as _____
- epicotyl
 - hypocotyl
 - amphicotyl
 - plumicotyl

- 24 Central zone of Histogen theory in root apex named as _____
- dermatogen
 - periblem
 - plerome
 - protoderm
25. Chemical constitution of sclerenchyma cell wall is _____
- lignin
 - cellulose
 - pectin
 - glycogen
- 26 _____ is only living element in xylem tissue
- Vessel
 - Tracheid
 - Xylem sclerenchyma
 - Xylem parenchyma
27. Conjoint collateral open type of vascular bundle is found in _____
- maize stem
 - sunflower stem
 - Dracaena stem
 - sugarcane stem
28. The habit of Bignonia is _____
- herb
 - shrub
 - climber
 - tree
29. The cuticle is absent on the leaves of _____
- free floating hydrophytes
 - rooted-floating hydrophytes
 - amphibious hydrophytes
 - submerged hydrophytes
30. Stinging hairs are found on all vegetative parts of _____
- Ocimum
 - Maize
 - Urtica
 - Cucumis
- 31 The portion of plumule below cotyledons, up to root boundary, is called as _____
- epicotyl
 - hypocotyl
 - amphicotyl
 - plumicotyl

- 32 The Histogen theory was proposed by _____
- Hofmeister
 - Nageli
 - Schmidt
 - Hanstein
33. The permanent tissue performs the function conduction of food is _____
- phloem
 - xylem
 - collenchyma
 - parenchyma
34. The outer most uniseriate layer of histogen theory is called as _____
- periblem
 - plerome
 - dermatogen
 - pericycle
35. In aquatic plants the parenchyma is mostly modified into _____
- chlorenchyma
 - collenchyma
 - idioblast
 - aerenchyma
36. The adventitious root system is the characteristic feature of _____
- Dicotyledons
 - Gymnosperms
 - Angiosperms
 - Monocotyledons
37. Non-adaptive abnormal secondary growth is found in _____ stem
- Bignonia
 - Dracaena
 - Sunflower
 - Aloe
38. Meristematic middle layer of periderm is _____
- Phellem
 - Phellogen
 - Phelloderm
 - Epiblema
39. During normal secondary growth in dicot stem, formation of multilayered non-vascular tissue outside the stele is called as _____
- Periderm
 - Protoderm
 - Pith
 - Pericycle

40. Articulated latex vessels are found in _____
- Nerium
 - Ficus
 - Calatropis
 - Hevea
41. Drosera (Sundew), possesses _____
- Nectaries
 - Digestive glands
 - Hydathodes
 - Oil glands
42. Fragrance to flower is due to _____
- digestive glands
 - laticifers
 - resin ducts
 - osmophores
43. Outermost protective layer of primary root is known as _____
- endodermis
 - epiblema
 - pericycle
 - hypodermis
44. Bulliform cells are found in the epidermis of _____
- Maize leaf
 - Mango leaf
 - Ficus leaf
 - Papaya leaf
45. Latex collected from Hevea plant commercially used for preparation of _____
- paints
 - rubber
 - cleaners
 - skin lotions
46. The _____ is chief water conducting element in Gymnosperm
- Vessel
 - Xylem parenchyma
 - Xylem fiber
 - Tracheid
47. Hard bast in plants mostly having _____ tissue
- parenchyma
 - collenchyma
 - aerenchyma
 - sclerenchyma

48. Conjoint Bicollateral vascular bundles occur in the stems of members of natural order _____
- Fabaceae
 - Liliaceae
 - Cucurbitaceae
 - Asteraceae
49. Central vascular cylinder of root and stem axis with or without pith is called as _____
- Stele
 - Ground tissue
 - Medulla
 - Hard bast
50. _____ is not a part of epidermal tissue system
- Trichome
 - Guard cell
 - Root hair
 - Companion cell

Que 2. Long answer type questions

- 1) What are meristem? How they are classified? Describe the types of meristem based on their position.
- 2) Describe the Tunica-carpus theory for structural development and add a note on its significance.
- 3) Describe in brief internal organization of higher plant body.
- 4) Give brief account of types of Vascular bundles with suitable examples.
- 5) What is secondary growth? Give an illustrative account of normal secondary growth in dicot stem.
- 6) Describe primary structures of Dicot and Monocot stem.
- 7) What is anomalous secondary growth? Give an illustrative account of anomalous secondary growth in Bignonia stem.
- 8) What is anomalous secondary growth? Give an illustrative account of anomalous secondary growth in Dracaena stem.
- 9) Describe in brief the Secretory tissue system.
- 10) Describe in brief the Epidermal tissue system.

Que 3. Short notes

- 1) Plant organs
- 2) Histogen theory of structural development
- 3) Characteristics of Meristem tissue.
- 4) Xylem
- 5) Phloem
- 6) Parenchyma
- 7) Apical cell theory

- 8) Periderm
- 9) Lenticel
- 10) T. S. of Monocot root
- 11) Trichome
- 12) Stomata
- 13) Mechanical tissues in higher plants
- 14) Laticifers
- 15) Function of epidermal tissue system
- 16) Collenchyma
- 17) Shoot apical meristem
- 18) Tunic- corpus theory
- 19) Nectaries
- 20) Classification of meristem based on their position
- 21) Concentric vascular bundle
- 22) Primary structure of Dicotyledonous root

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Question Bank for Mar 2022 (Summer Examination)

Subject Code: 78910 Subject Name: Botany Paper VIII

Que 1 Rewrite the following sentences choosing the correct alternative.

1. -----is a non-protein part of an enzyme.
A. Co-factor
B. Co-enzyme
C. Isozyme
D. Co-enzyme-A
2. Enzymes are-----in nature.
A. Lipid
B. Carbohydrates
C. Protein
D. Sugar
3. Enzymes are sensitive to heat and -----.
A. pH
B. Acid
C. Alkali
D. Cold
4. -----enzyme catalyse the oxidation-reduction reaction.
A. Transaminase
B. Glutamine synthetase
C. Phosphofructokinase
D. Oxido-reductase
5. Induced Fit hypothesis for mechanism of enzyme action was proposed by-----
A. Kuhne
B. Koshland
C. Kocher
D. Emil Fischer
6. Enzymes acts on specific-----.
A. Substrate
B. Molecule
C. Ions
D. Photons
7. -----types of enzymes have been recognized by IUB.
A. 4
B. 5
C. 6
D. 8
8. -----element is involved in nitrate reduction in plants.
A. calcium
B. phosphorous
C. molybdenum
D. zinc
9. *Azolla* shows association with -----algae.
A. *Nostoc*
C. *Oscillatoria*

- | | | |
|--|----------------|-----------------|
| | A. Chloroplast | C. Cytosol |
| | B. Nucleus | D. Mitochondria |
21. The electron transport system consist of-----multimolecular complexes.
- | | |
|------|------|
| A. 4 | C. 5 |
| B. 3 | D. 2 |
22. Krebs cycle takes place in-----.
- | | |
|-----------------|----------------|
| A. Cytosol | C. Chloroplast |
| B. Mitochondria | D. Peroxisome |
23. During aerobic respiration one molecule of glucose generates-----ATP molecules.
- | | |
|-------|-------|
| A. 34 | C. 38 |
| B. 36 | D. 32 |
24. Anaerobic respiration occurs in absence of molecular-----
- | | |
|-------------|-------------------|
| A. Nitrogen | C. Hydrogen |
| B. Oxygen | D. Carbon dioxide |
25. TCA cycle is also known as-----
- | | |
|----------------------|--------------------|
| A. Glyoxylate cycle | C. Glycolate cycle |
| B. Citric acid cycle | D. EMP pathway |
26. Enzyme acts on specific-----
- | | |
|---------------|------------|
| A. Molecules | C. Ions |
| B. Substrates | D. Photons |
27. Chemically enzymes are-----
- | | |
|------------------|---------------|
| A. Proteins | C. Lipids |
| B. Carbohydrates | D. Polyphenol |
28. -----proposed the Lock and Key hypothesis of enzyme action.
- | | |
|-----------------|-----------|
| A. Emil Fischer | C. Kuhne |
| B. Koshland | D. Kocher |
29. An enzyme that joins the ends of two strands of nucleic acid is-----
- | | |
|---------------|---------------|
| A. Polymerase | C. Synthetase |
| B. Ligase | D. Hydrolase |
30. The function of enzyme phosphorylase is- -----.
- | | |
|----------------------------------|------------------------------------|
| A. Transfer of carboxylase group | C. Transfer of inorganic phosphate |
| B. Transfer of amino group | D. addition of water molecule |

31. -----is produced with the combination of apoenzyme and prosthetic group.
- A. Enzyme-substrate complex C. Holoenzyme
 B. Enzyme-product complex D. Co-enzyme
32. Apoenzyme is-----of holoenzyme.
- A. protein part C. co-factor
 B. prosthetic group D. non-protein part
33. -----is a symbiotic nitrogen fixing bacteria.
- A. *Pseudomonas* C. *Clostridium*
 B. *Rhizobium* D. *Azotobacter*
34. -----bacteria converts ammonium compounds into nitrates.
- A. Denitrifying bacteria C. Nitrifying bacteria
 B. Ammonifying bacteria D. Sulphur bacteria
35. -----is a major plant macronutrient found in nucleic acid and proteins.
- A. Nitrogen C. Sulphur
 B. Calcium D. Iron
36. The conversion of atmospheric free nitrogen into organic forms is termed as-----
- A. Nitrogen fixation C. Denitrification
 B. Nitrification D. Nitrogen assimilation
37. The viviparous condition is related to high concentration of -----in the leaves of mother plant.
- A. Ammonium C. Chlorides
 B. Phosphates D. Nitrates
38. -----pigments are present in root nodules of leguminous plants.
- A. Phytochrome C. Nod-haemoglobin
 B. Leghaemoglobin D. Haemoglobin
39. The red and far-red sensitivity of seeds is due to-----pigment.
- A. Chlorophyll a C. Phytochrome
 B. Carotenoid D. Xanthophyll
40. In-----type of seed germination cotyledons do not come out of the soil surface.
- A. Epigeal C. Hypogeal
 B. Vivipary D. none of these
41. The method of softening and weakening of seed coat is known as-----.

- A. Scarification
B. Impaction
- C. Hardening
D. Loosening
42. Anaerobic respiration is always completed in-----.
- A. cell nucleus
B. cell cytoplasm
- C. cell wall
D. cell membrane
43. Glycolysis occurs in-----.
- A. Cytosol
B. Mitochondria
- C. Chloroplast
D. Peroxisome
44. -----is an important cause of seed dormancy.
- A. Hard seed coat
B. Mature embryo
- C. Reserve food
D. None of these
45. -----is dormancy induced hormone
- A. Indole Acetic acid
B. Abscisic Acid
- C. Gibberelic acid
D. Cytokinin
46. During anaerobic respiration-----is converted into alcohol and CO₂
- A. Malic acid
B. Citric acid
- C. Pyruvic acid
D. Oxaloacetic acid
47. -----is a process responsible for oxidation of organic substances with release of energy and CO₂.
- A. Photosynthesis
B. Protein synthesis
- C. Respiration
D. Transpiration
48. Isoenzymes are
- A. multiple forms of enzymes
B. multiple forms of fats
- C. multiple forms of lipids
D. multiple forms of polyphenols
49. Non-protein part of enzyme is called as
- A. cis
C. aldo
- B. trans
D. prosthetic group
50. IUB means
- A. International Union of Business
C. International Union of Biochemistry
- B. International Union of Broadcasting
D. International Union of Botany
51. The atmospheric Nitrogen is present inform.

- | | |
|--------------------|--------------------|
| A. N ₂ | B. NO ₃ |
| C. NH ₄ | D. NH ₃ |
52. Nitrogen comprisesof the earth's atmosphere.
- | | |
|--------|--------|
| A. 10% | B. 20% |
| C. 60% | D. 78% |
53. The transfer of amino group from one amino acid to a keto acid is called.....
- | | |
|-------------------|-----------------------------|
| A. ammonification | B. N ₂ reduction |
| C. transamination | D. assimilation |
54.protein is secreted in roots to attract N₂ fixing bacteria from soil.
- | | |
|-------------|----------------|
| A. Arginine | B. Lecithin |
| C. Cysteine | D. Polymorphin |
55. Conversion of glucose to glucose -6-phosphate is catalyzed by-----
- | | |
|---------------|------------------------|
| A. hydrolase | B. phosphofructokinase |
| C. hexokinase | D. aldolase |
56. The net gain of energy from one molecule of glucose during aerobic respiration is.....
- | | |
|-----------|-----------|
| A. 34 ATP | B. 38 ATP |
| C. 24 ATP | D. 28 ATP |
57. End products of respiration in plants are.....
- | | |
|--|--------------------------------|
| A. CO ₂ , H ₂ O and Energy | B. Sugars and H ₂ O |
| C. Starch and O ₂ | D. H ₂ O and Energy |
58. Respiratory enzymes are located in.....
- | | |
|---------------------------|----------------------------|
| A. Matrix of Mitochondria | B. Perimitochondrial space |
| C. Outer membrane | D. Cristae |
59. Electron transport system is located in mitochondrial-----
- | | |
|-------------------------|-------------------|
| A. Outer membrane | B. Inner membrane |
| C. Inner membrane space | D. matrix |
60. The ultimate electron acceptor of respiration in aerobic organism is-----
- | | |
|---------------|-------------|
| A. cytochrome | B. hydrogen |
| C. oxygen | D. glucose |
61. The failure of seeds to germinate in favorable conditions is.....
- | | |
|------------------|--------------|
| A. Dormancy | B. Viability |
| C. Non viability | D. Longevity |

62. Seeds in which germination is stimulated by light are called.....
- A. Positive photoblastic B. Negative photoblastic
C. photoperiodic D. vernalized
63.growth hormone break the seed dormancy.
- A. Auxins B. Gibberellins
C. Abscisic acid D. Ascorbic acid
64. The method of softening and weakening of seed coat is known as-----.
- A. Scarification B. Impaction
C. Hardening D. Loosening
65. The reserve food in seeds during germination is finally converted into soluble-----
- A. Starch B. Sucrose
C. Oligosaccharides D. Amino acids
66. The non-catalytic site of enzyme where end product is bound is called-----
- A. Allosteric site B. Allosteric bond
C. Allosteric product D. Allosteric enzyme
67. Multimolecular forms of the same enzyme that differ in their electrophoretic mobility are known as-----
- A. Isoenzyme B. Apoenzyme
C. Holoenzyme D. Co-enzyme
68. The enzyme phosphorylase converts starch into soluble sugars at pH
- A. 5 B. 8
C. 7 D. 6
69. Lactic acid fermentation is associated with ----bacteria.
- A. Lactobacillus B. Rhizobium
C. Nitrosomonas D. Pseudomonas
70. -----enzyme is involved in the production of alcoholic beverages.
- A. Fumarase B. Zymase
C. Dehydrogenase D. Fumarase

Que 2 Long Answer type questions.

1. What are the enzymes? Explain in brief classification of enzymes with suitable example.
2. Define Enzyme. Describe the mechanism of enzyme action.

3. What are the enzymes? Explain 'Enzyme as a Biocatalyst'.
4. What is Respiration? Give an account of Glycolysis.
5. Describe Krebs cycle and give its significance.
6. Explain the electron transport system in mitochondria.
7. What is respiration? Explain mechanism of anaerobic respiration.
8. Give an account of fermentation process.
9. What is seed dormancy? Give different methods to break seed dormancy.
10. Give an account of biochemical changes during seed germination.
11. Describe mechanism of nitrogen fixation in root nodules.
12. Explain in brief biological nitrogen fixation.

Que. 3 Short Notes

1. Anaerobic respiration
2. Importance of Fermentation
3. Oxidative decarboxylation of pyruvic acid or synthesis of A. COA from pyruvic acid
4. Krebs cycle
5. Types of Respiration
6. Lock and Key hypothesis
7. Induced fit hypothesis
8. Properties of enzymes
9. Co-enzyme
10. Co-factor
11. Effect of pH and temperature on enzyme activity
12. Nif genes
13. Assimilation of ammonia
14. Nitrogen fixation in root nodules
15. Nitrate reduction
16. Causes of seed dormancy
17. Factors affecting seed germination
18. Viviparous mode of seed germination
19. Hypogeal type of seed germination
20. Epigeal type of seed germination