MSc(HS/2Yr)(Botany)

1. The grain of maize is:
A) Achene B) Caryopsis C) Cypsella D) Nut

2. Based upon duration, the sepals falling down immediately after the opening of flower are:
A) Accrescent B) Caducous C) Deciduous D) Marcescent

3. The law of inheritance of acquired characters was postulated by:
A) Charles Darwin B) Hugo de Vries
C) Lamarck D) G.J. Mendel

4. In *Nepenthes*, the pitcher is a modification of:
A) Leaf base B) Petiole C) Lamina D) Stipules

5. The type of compound leaves in *Coriander* is:
A) Unipinnate B) Bipinnate C) Tripinnate D) Dcompound

6. In Australian *Acacia*, the leaves are modified into:
A) Cladodes B) Phylloclades C) Phyllodes D) Tendrils

7. The stiff and pointed structures in *Bougainvillea* are called:
A) Thorns B) Spines C) Prickles D) Bristles

8. Which of the following diseases is caused by bacteria?
A) Late blight of Potato B) Powdery mildew of wheat
C) Citrus canker D) Tobacco mosaic

9. Fleshy leaf like structures in *Opuntia* is a modification of:
A) Root B) Flower C) Petiole D) Stem

10. Root cap is absent in:
A) *Zea mays* B) *Helianthus* C) *Nymphaea* D) *Azolla*

11. Involucral bracts are present in:
A) Nut B) Capitulum C) Spadix D) Catkin

12. Red tides are caused by the rapid multiplication of:
A) *Nostoc* B) *Euglena* C) *Cosmarium* D) *Gonyaulax*

13. Numerical Taxonomy is based on:
A) Vegetative and asexual characteristics
B) Sexual characteristics
C) Evolutionary relationships
D) All observable characteristics

14. Grinding of spices breaks down or exposes the tissues with inevitable loss of:

A) Colour Principles B) Aromatic principles
C) Moisture principles D) Weight principles

15. The permanent taste in ginger is due to:

A) Oil B) Minerals C) Resins D) Starch

16. The quality of coffee mainly depends upon:

A) Harvesting B) Processing
C) Physiological maturity D) Ripening

17. The literal meaning of word 'Locust' is:

A) Location B) Area C) Pests D) Plague

18. Companion cells are derived from:

A) Parenchyma B) Fibres C) Sclerotic cellsD) Sieve elements

19. A dew drop at the tip of tomato leaves on cool night is formed due to:

A) Atmospheric water B) Evaporation of water from stomata
C) Secretion of water from hydathodes D) Excessive water absorption at the root tips

20. Stone cells are also known as:

A) Brachysclereids B) Osteosclereids
C) Macroschereids D) Trichoblasts

21. Cells entirely lacking turgor pressure are referred to as:

A) Dead B) Inactive C) Flaccid D) Immotile

22. In plant physiology, radioactive isotopes are used as:

A) Tracers B) Activators C) Catalysts D) Initiators

23. The tendency of colloidal particles to attract and retain other particles at their surface is:

A) Adsorption B) Absorption C) Gelation D) Solation

24. Ammonia poisoning occurs in temperature sensitive plants at:

A) Low temperature B) High temperature
C) Moderate temperature D) Low light intensity

25. Which of the following is more resistant to high temperature stress:

A) Low hydrated tissues B) Moderate hydrated tissues
C) High hydrated tissues D) Very high hydrated tissues

26. Opening and closing of flowers represents a kind of:

A) Autonomic movement B) Nutation
C) Tropic movement D) Nastic movement

27. The scutellum of grass embryo is:

A) Photosynthetic organ B) Absorption organ
C) Reserve food storage organ D) Vestigeal organ

28. During germination of barley, the enzyme α-amylase is secreted by:

A) Seed coat B) Aleurone layer
C) Coleorhizae D) Coleoptiles

29. In the respiratory chain of electron transport, which one of the following is the terminal cytochrome that reacts with oxygen?

A) Cytochrome b B) Cytochrome b_6 C) Cytochrome c D) Cytochrome a_3

30. Which of the following enzyme has a dual role?

A) PEP carboxylase B) RuBisCo
C) Phosphorylase D) Aldolase

31. Which of the following does not require carrier molecules during transport through cell membranes?

A) Simple diffusion B) Facilitated diffusion
C) Na^+- K^+ transport D) Active transport of sugars and amino acids

32. Which one of the following features is NOT found in meristematic cells?

A) Dense cytoplasm B) Isodiametric shape
C) Large prominent nucleus D) Thick cell-wall due to lignification

33. Zymogens are:

A) Enzyme inhibitors B) Enzyme solvents
C) Chemical precursors of enzymes D) Active enzymes

34. Which of the following are important for nitrogen fixation?

A) Calcium and potassium B) Sodium and phosphorus
C) Magnesium and boron D) Iron and molybdenum

35. Statocysts are:

A) Air-cells B) Chlorophyll cells
C) Fibre-cells D) Sensory cells

36. Movement induced by internal stimulus is known as:

A) Autonomic B) Paratonic C) Mechanical D) Independent

37. DNA replication in cell cycle occurs in which of the following phases?

A) Metaphase B) G_1 Phase C) S Phase D) G_2 Phase

38. Photorespiration is stimulated in:

A) Light B) Dark
C) A chamber devoid of CO_2 D) A chamber filled with CO_2

39. Deficiency of oxygen during mitosis:

A) Shortens the cycle period B) Extends the cycle period
C) Has no effect on the process D) Cause polyploidy

40. Reactive oxygen species are NOT found in:

A) Mitochondria B) Peroxisome C) Chloroplast D) Ribosomes

41. When *Hydrilla* is removed from aquatic habitat to be planted in soil:

A) The plant will dry up and die
B) The plant would grow though with a stunted growth
C) The number of lacunae reduce and a thick cuticle is developed
D) It start producing collenchyma and sclerenchyma cells for mechanical support

42. Dissociation constant (Kw) of water increases with:

A) Atmospheric pressure B) Temperature
C) Dilution D) Acid

43. Red Data Book gives information on:

A) Plants and animals found in Red sea B) Plants possessing red pigments
C) Plants threatened with extinction D) Effects of red light on photosynthesis

44. In gene banks, genetic material is in the form of:

A) Leaves B) Shoots C) Seeds D) Flowers

45. Which one of the following is the correct sequence of energy in an ecosystem?

A) Herbivore > Carnivore >Producer B) Producer > Herbivore > Carnivore
C) Producer > Carnivore > Herbivore D) Decomposer > Carnivore > Herbivore

46. Eutrophication is maximum in:

A) Upper layers of deep lakes B) Upper layers of shallow lakes
C) Bottom layers of shallow lakes D) Bottom layers of deep lakes

47. The gene which suppresses the action of a gene at other locus is called:

A) Lethal B) Penetrance C) Pleiotropic D) Epistatic

48. The chemical widely used for inducing polyploidy is:

A) Putrescine B) Spermidine C) Spermine D) Colchicine

49. Which of the following is not a type of direct gene transfer method:

A) Biolistic method B) Viral mediated

C) Electroporation D) Microinjection

50. *The enzymes present in the lysosomes are optimally active at the:*
A) *Basic pH* *B) Acidic pH* *C) Neutral pH* *D) All the pH ranges*

51. Ramachandran plot deals with the conformational studies of:
A) Carbohydrates B) *Proteins*
C) Lipids *D) Nucleic acids*

52. *Association of fungi with the roots of higher plants is known as:*
A) *Lichen* *B) Mycoplasma* *C) Mycorrhiza* *D)* Corallorhiza

53. Which of the following is a heterosporous genus?
A) Equisetum B) Salvinia C) Funaria D) Lycopodium

54. Agar, a commercial product used in ice-creams, is obtained from:
A) Gelidium B) Laminaria C) Porphyra D) Chlorella

55. Adventitious buds arise from the notches present at the margins of leaves in:
A) Ginger B) Agave C) Bryophyllum D) Water hyacinth

56. Loss of water from the leaves of plants in liquid phase is known as:
A) Transpiration B) Guttation C) Evaporation D) Diffusion

57. The inheritance of flower colour in dog flower is an example of:
A) True dominance B) Co-dominance
C) Incomplete dominance D) Maternal inheritance

58. The historic Convention on Biological Diversity (CBD) was held in:
A) Johannesburg B) New York C) Rio de Janeiro D) Kyoto

59. Chemical substances like nicotine, caffeine, quinine, strychnine and opium are produced by plants as a:
A) Defence B) Medicine C) Commercial item D) Food item

60. The detritus food chain begins with:
A) Producers B) Carnivores C) Herbivores D) Dead organic matter

61. A toxic insecticidal component produced by *Bacillus thuringiensis* is a:
A) Glycoside B) Lipid C) Protein D) Alkaloid

62. In the ribose moiety of a ribonucleoside, phosphorylation is possible only at _____ in the furanose ring formation.
A) C5' (one) position B) C1', C4' (two) positions
C) C2', C3' C5' (three) positions D) C1', C2', C3', C4', C5' (five) positions

63. In Isoelectric focusing, proteins are separated on the basis of:

A) Size
B) Relative content of positively charged residue
C) Relative content of negatively charged residue
D) Relative content of positively and negatively charged residue

64. _____type of vascular bundles is characterized by the occurrence of xylem and phloem at the same radius.
A) Conjoint B) Conjuctive C) Collateral D) Closed

65. Presence of vessels is a characteristic feature of:
A) Bryophytes B) Pteridophytes C) Gymnosperms D) Angiosperms

66. In most of the angiosperms, pollen grains are shed at:
A) 2-celled stage B) 3-celled stage C) 4-celled stage D) 5-celled stage

67. In which of the following plants, dioecy occurs?
A) Maize B) Banana C) Papaya D) Mango

68. There is net gain of _____ molecules of ATP during fermentation of one molecule of glucose.
A) 1 B) 2 C) 3 D) 4

69. _____ promote bolting in beet, cabbages and many plants with rosette habit.
A) Auxins B) Gibberellins C) Cytokinins D) Abscisic acid

70. Vertical distribution of different species occupying different levels in a biotic community is:
A) Alfa diversity B) Stratification C) Beta diversity D) Gamma diversity

71. _____ are the smallest living cells known that can survive without oxygen.
A) Archaebacteria B) Viruses
C) Cyanobacteria D) Mycoplasma

72. The network of hyphae is:
A) Sclerotium B) Mycelium C) Apothecium D) Acervulus

73. Which of the following is one of the tallest tree species in the world?
A) *Pinus* B) *Sequoia* C) *Cedrus* D) *Eucalyptus*

74. Bulliform cells are present only in:
A) Orchids B) Grasses C) Flowers D) Fruits

75. The oils and fats are stored in which of the following plastid types?
A) Amyloplsts B) Aleuroplasts C) Elaioplasts D) Chromoplasts

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