

Pavzi Media

JIPMER

Botany

Model Paper-2

Suggested by Subject Experts



1. Double fertilization was discovered by:

- 1) **Nawaschin**
- 2) Stersburger
- 3) Emerson
- 4) None of these

- 1) 15:1
- 2) 1:15
- 3) 1:13
- 4) **All yellow and round seeds**

2. In photosynthesis action absorption spectrum were related by:

- 1) Von Helmont
- 2) **Engelmann**
- 3) Emerson
- 4) Lavosier

7. Commercial cork is obtained from:

- 1) Flax
- 2) Juglans regia
- 3) Hevea brassiliensis
- 4) **Quercus suber**

3. Which one of the following doesn't help in molecule transport?

- 1) Diffusion
- 2) Osmosis
- 3) **Surface tension**
- 4) Active transport

8. Tea and coffee are affected by:

- 1) Phytophthora
- 2) **Cephaleuros**
- 3) Herviella
- 4) Albugo candida

4. Stomatal opening in plants occurs due to the influx of:

- 1) Na
- 2) **K**
- 3) ABA
- 4) Auxins

9. If decomposers are removed what will happen to the ecosystem?

- 1) Energy cycle is stopped
- 2) **Mineral cycle is stopped**
- 3) Consumers cannot absorb solar energy
- 4) Rate of decomposition of mineral increases

5. Litmus is obtained from:

- 1) Rocella montagnei
- 2) Lasallia postulate
- 3) **Both (a) and (b)**
- 4) Cladonia crispata

10. Which are sensitive to SO₂ pollution?

- 1) Mosses
- 2) Algae
- 3) **Lichen**
- 4) Ferns

6. If a plant having yellow or round seeds was crossed with another plant having green and wrinkled seeds then F₁ progeny are in the ratio:

- 1) **Naked ovule**
- 2) They have megaspore
- 3) Appears as palm tree
- 4) Have compound leaves

11. Though cyas has 2 cotyledons, this is not included in dicot because

12. In meiosis division is:

- 1) **1st reductional and 2nd equational**
- 2) 1st equational and 2nd reductional
- 3) Both reductional
- 4) Both equational

13. Auxin in plant means for:

- 1) **Cell elongation**
- 2) Fruit ripening
- 3) Cell division
- 4) Inhibit the root growth

14. The thylakoid in chloroplast are arranged as:

- 1) Interconnected disc
- 2) Interconnected sacs
- 3) **Stacked discs**
- 4) None

15. Which of the following is used as green manure?

- 1) Azolla
- 2) Azadirachta indica
- 3) **Crotolaria iuncea**
- 4) Hecea brassiliensis

16. The non-photosynthetic, non-symbiotic N₂ fixing bacteria are:

- 1) Rhodobacter
- 2) Spirillum
- 3) **Azotobacter**
- 4) All the above

17. In monocot roots which types of vascular bundles are found?

- 1) Collateral, conjoint and closed
- 2) **Radial with exarch xylem**
- 3) Bicolateral, conjoint and closed
- 4) Radial with endarch xylem

18. The modified stem of opuntia is:

- 1) Phyllode
- 2) **Phylloclade**
- 3) Cladode
- 4) Stamroinode

19. What's the difference between RNA and DNA?

- 1) Base
- 2) Sugar
- 3) **Sugar and base**
- 4) Phosphate

20. Increase in toxic concentration from one trophic level to another trophic level is called:

- 1) Ecological toxification
- 2) **Bio-magnification**
- 3) Bioconcentration
- 4) Cytological effect

21. Potometer is used to measure:

- 1) Ascent of sap
- 2) Root pressure
- 3) **Transpiration**
- 4) Photosynthesis

22. Which one is antioxidant vitamin?

- 1) Vitamin D
- 2) **Vitamin E**
- 3) Vitamin B
- 4) Vitamin K

23. The net gain ATP from complete oxidation of 1 molecule of glucose in eukaryote is:

- 1) 2
- 2) 4
- 3) 24
- 4) **36**

24. In bacteria respiration occurs in :

- 1) **Cytoplasmic membrane**
- 2) Mitochondria
- 3) Nuclear membrane
- 4) Endoplasmic reticulum

25. R.Q. is always less than one in:

- 1) Wheat
- 2) Millets
- 3) Bean
- 4) **Castor**

26. Pencils are prepared from the wood of:

- 1) Pinus vinaster
- 2) **Juniperus virginiana**
- 3) Chamaecyparis piscifera
- 4) Abies pindrow

27. Ageing is retarded by:

- 1) ABA
- 2) **CKN**
- 3) GA
- 4) C_2H_4

28. The triticale is an intergeneric hybrid between:

- 1) Wheat & maize

- 2) Maize and rye
- 3) **Wheat and rye**
- 4) Bajra and wheat

29. The dormancy of seed is regulate by:

- 1) **ABA**
- 2) Ethylene
- 3) GA-3
- 4) Dithydrozeatin

30. Cochiline prevents the mitosis of the cells at which of the following stage?

- 1) Anaphase
- 2) **Metaphase**
- 3) Prophase
- 4) Interphase

31. for the formation of tetrasporic embryosac, how many megaspore mother cells are required?

- 1) 1
- 2) 2
- 3) 3
- 4) **4**

32. DNA replication generally proceeds in a :

- 1) **5→3 direction**
- 2) 3→5 direction
- 3) 3→3 direction
- 4) 5→5 direction

33. The protein rich alga is:

- 1) Ulothrix
- 2) Spirogyra
- 3) Nostoc
- 4) **Chlorella**

34. Biotic factors are:

- 1) Chemical factors of soil which affect life
- 2) Physical factors of soil which affect life
- 3) **All living organisms which influence other organisms**
- 4) Factors of atmosphere which affect life

35. Which of the following as a living fossil?

- 1) Pinus
- 2) Gnetum
- 3) **Ginkgo**
- 4) Riccia

36. The alga used for quick sewage disposal is:

- 1) Ulothrix
- 2) Cladophora
- 3) Volvox
- 4) **Chlorella**

37. Lactic acid is produced by Rhizopus species:

- 1) R. oryzae
- 2) R. stolonifer
- 3) **R. nodosus**
- 4) R. sexualis

38. The number of female flowers found in a cyathium is:

- 1) One
- 2) **Three**
- 3) Two
- 4) Many

39. In turnip, 2/3 part of swollen area is derived from:

- 1) Hypophysis
- 2) **Hypocotyl**
- 3) Epicotyls
- 4) Radical

40. The amphibians of plant kingdom are:

- 1) **Algae**
- 2) Bryophytes
- 3) Thallophytes
- 4) Floating plants

41. The law of limiting factors for photosynthesis was enunciated by:

- 1) R. Hill
- 2) Calvin
- 3) **Krebs**
- 4) Blackman

42. Who said that "transpiration is a necessary evil"?

- 1) **Curtis**
- 2) Steward
- 3) Andersen
- 4) J.C. Bose

43. Transpiration would be lowest when:

- 1) Wind velocity is high
- 2) Enough water is in the soil
- 3) **Atmospheric RH is high**
- 4) High temperature and light

44. Which of the following exhibits a direct proportionality to transpiration?

- 1) **Light and RH**
- 2) Temperature and RH
- 3) Temperature and wind
- 4) RH and wind

45. Water in plants is transported by:

- 1) Cambium
- 2) Phloem
- 3) **Xylem**
- 4) Epidermis

46. the most important force which pulls water up in tall trees is:

- 1) Imbibitions force
- 2) Osmotic force
- 3) **Cohesive force**
- 4) Electromagnetic force

47. The light phase of photosynthesis is called:

- 1) **Hill reaction**
- 2) Photo action
- 3) Pigment action
- 4) Chlorophyllous process

48. The plant cuscuta shows maximum photosynthesis in:

- 1) Red light
- 2) Blue light
- 3) Green light
- 4) **No photosynthesis at all**

49. during anaerobic conditions, the rate of glycolysis increases, is called:

- 1) Compensation point
- 2) Extinction point
- 3) Warburg effect
- 4) **Pasteur effect**

50. Hydroponics is a:

- 1) **Soiless culture**
- 2) Waterless culture
- 3) Airless culture
- 4) None of these

51. Green plants constitute:

- 1) **First trophic level**
- 2) Second trophic level
- 3) Third trophic level
- 4) Completer food chain

52. The plant that is characteristics component of mangrove vegetation:

- 1) **Rhizophora mangel**
- 2) Ficus religiosa
- 3) Mangifera indica
- 4) Prosopis specigera

53. Carrier of fluorosis is:

- 1) CO₂
- 2) Chlorine
- 3) Nitrogen
- 4) **Water**

54. Non-genetic RNA is of:

- 1) Two types
- 2) **Three types**
- 3) Only one type
- 4) None of these

55. Kappa particles indicate:

- 1) Nuclear inheritance
- 2) **Cytoplasmic inheritance**
- 3) Mutation
- 4) Nucleo-cytoplasmic inheritance

56. A nucleotide is a molecule consisting of a :

- 1) **Hexose sugar, phosphorous and albumen**
- 2) Phosphorous, iron and calcium
- 3) Phosphate, 5-carbon sugar and nitrogen base
- 4) RNA and glucose

57. Quiescent center is the zone of:

- 1) Least mitotic activity in the root apex
- 2) Least mitotic activity in the root apex
- 3) Maximum mitotic activity in the root apex
- 4) **Maximum mitotic activity in the shoot apex**

58. Perisperm is:

- 1) **Degenerate part of synergids**
- 2) Peripheral part of endosperm
- 3) Degenerate part of secondary nucleus
- 4) Remnant of nucellus

59. An orthotropous ovule is one in which micropyle and chalazas are:

- 1) In straight line of funiculus
- 2) Parallel of funiculus
- 3) **At right angles to funiculus**
- 4) Ablique to funiculus

60. Which of the following is non symbiotic bio-fertilizer?

- 1) VAM
- 2) **Azotobacter**
- 3) Anabaena
- 4) Rhizobium

61. Transformation in bacteria was discovered by:

- 1) Lederberg

2) **Griffith**

- 3) Avery et. Al.,
- 4) Tatum

62. Lathyrism is caused by;

- 1) Dal
- 2) Moth dal
- 3) **Khesari dal**
- 4) Glycine

63. The arrangement of genes on chromosomes in:

- 1) **Linear**
- 2) Ovoid
- 3) Diffused
- 4) Spiral

64. Pigment anthocyanin is located in;

- 1) Chloroplast
- 2) chromoplast
- 3) Cytoplasm
- 4) **Vacuole**

65. Cell theory was propounded in 1838-39 by:

- 1) Schleiden
- 2) Schwann
- 3) **Schleiden and Schwann**
- 4) Virchow

66. Non-protein part of enzyme is known as :

- 1) Holoenzyme
- 2) Apoenzyme
- 3) **Prothetic group**
- 4) None of these

67. The enzyme responsible for atmospheric nitrogen fixation is:

- 1) **Nitrogenase**
- 2) Hydrogenase
- 3) Oxygenase
- 4) Carboxylase

68. Insects captured by insectivorous plants fulfill their requirements of:

- 1) Enzymes
- 2) Oxygen
- 3) **Nitrogen**
- 4) Water

69. Gibberellin was first extracted from:

- 1) **Gibberella fujikuroi**
- 2) Algae
- 3) Bacteria
- 4) Roots of higher plants

70. The main organelle involved in modification and routing of newly synthesized proteins to their destinations is

- 1) Mitochondria
- 2) **Endoplasmic reticulum**
- 3) Lysosome
- 4) chloroplast

71. During transcription holoenzyme RNA polymerase binds to a DNA sequence and the DNA assumes a saddle like structure at that point. What is that sequence called?

- 1) CAAT box
- 2) GGTT box
- 3) AAAT box
- 4) **TATA box**

72. Chlorophyll in chloroplasts is located in

- 1) **Grana**
- 2) Pyrenoid
- 3) Stroma
- 4) Both (a) and (c)

73. Three crops that contribute maximum to global food grain production are

- 1) **Wheat, rice and maize**
- 2) Wheat, maize and sorghum
- 3) Rice, maize and sorghum
- 4) Wheat, rice and barley

74. Genes for cytoplasmic male sterility in plants are generally located in

- 1) **Mitochondrial genome**
- 2) Cytosol
- 3) Chloroplast genome
- 4) Nuclear genome

75. Which one of the following hydrolysis internal phosphodiester bonds in a polynucleotide chain?

- 1) Lipase
- 2) Exonuclease
- 3) **Endonuclease**
- 4) Protease

76. The name of Norman Borlaug is associated with

- 1) **Green revolution**
- 2) Yellow revolution
- 3) White revolution
- 4) Blue revolution

77. In which one pair both the plants can be vegetatively propagated by leaf pieces?

- 1) **Bryophyllum and kalanchoe**
- 2) Chrysanthemum and agave
- 3) Agave and kalanchoe
- 4) Asparagus and bryophyllum

78. Top-shaped multicilliate male gametes and the mature seed which bears only one embryo with two cotyledons are characteristic features of

- 1) Polypetalous angiosperms
- 2) Gamopetalous angiosperms
- 3) Conifers
- 4) **Cycads**

79. More than 70% of worlds freshwater is contained in

- 1) Antarctica
- 2) Glaciers and mountains
- 3) Greenland
- 4) **Polar ice**

80. Biodiversity act of India was passed by the parliament in the year

- 1) 1996
- 2) 1992
- 3) **2002**
- 4) 2000

81. During which stage in the complete oxidation of glucose are the greatest number of ATP molecules formed from ADP?

- 1) Conversion of pyruvic acid to acetyl Co-A
- 2) **Electron transport chain**
- 3) Glycolysis
- 4) Kerbs cycle

82. Ectopholic siphonostele is found in

- 1) Adiantum and cucurbitaceae
- 2) **Osmunda and Equisetum**
- 3) Marsilea and Botrychium
- 4) Dicksonia and maiden hair fern

83. Which of the following represents the edible part of the fruit of litchi?

- 1) Pericarp
- 2) Mesocarp
- 3) **Juicy aril**
- 4) Endocarp

84. Carbohydrates, the most abundant biomolecules on earth, is produced by:

- 1) All bacteria, fungi and algae
- 2) Fungi, algae and green plant cells
- 3) **Some bacteria, algae and green plant cells**
- 4) Viruses, fungi and bacteria

85. Chemiosmotic theory of ATP synthesis in the chloroplasts and mitochondria is based on

- 1) **Proton gradient**
- 2) Accumulation of K ions
- 3) Accumulation of Na ions
- 4) Membrane potential

86. In a type of apomixes known as adventive embryony, embryos develop directly from the

- 1) **Nucellus or integuments**
- 2) Synergids or antipodals in an embryo sac
- 3) Accessory embryo sacs in the ovule
- 4) Zygote

87. through which cell of the embryo sac, does the pollen tube enter the embryo sac?

- 1) Egg cell
- 2) Central cell
- 3) Persistent synergid
- 4) **Degenerated synergid**

88. Which one of the following represents an ovule, where the embryo sac becomes horse-shoe shaped and the funiculus and micropyle are close to each other?

- 1) Circinotropous
- 2) Anatropous
- 3) **Amphitropous**
- 4) Atropous

93. Photosynthetic active radiation has the following range of wavelengths

- 1) **400-700 nm**
- 2) 450-950 nm
- 3) 340-450-nm
- 4) 500-600 nm

89. In a wood dicotyledonous tree, which of the following parts will mainly consist of primary tissues?

- 1) Stem and root
- 2) All parts
- 3) **Shoot tips and root tips**
- 4) Flowers, fruits and leaves

95. Golden rice is a transgenic crop of the future with the following improved trait

- 1) High lysine
- 2) Insect resistance
- 3) High protein content
- 4) **High vitamin A content**

90. Which of the following is generally used for induced mutagenesis in crop plants?

- 1) Alpha particles
- 2) X-rays
- 3) UV (260 nm)
- 4) **Gamma rays (from cobalt 60)**

96. In Whittaker's system of classification, prokaryotes belong to the kingdom

- 1) **Monera**
- 2) Protista
- 3) Animalia
- 4) Fungi

91. In order to find out the different types of gametes produced by a pea plant having the genotype AaBb, it should be crossed to a plant with the genotype

- 1) AaBB
- 2) AaBb
- 3) AABB
- 4) **aabb**

97. Water bloom is generally caused by

- 1) Green algae
- 2) **Blue-green algae**
- 3) Bacteria
- 4) Hydrilla

92. *Bacillus thuringiensis* strains have been used for designing novel

- 1) Bio-metallurgical technique
- 2) Bio-mineralization processes
- 3) **Bio-insecticidal plants**
- 4) Bio-fertilizers

98. Which one of the following is a saprophytic bryophyte?

- 1) Riccia fluitans
- 2) **Buxbaumia aphylla**
- 3) Funaria hygrometrica
- 4) Sphagnum

99. A genophore is made up of

- 1) **A single double stranded DNA**
- 2) A single stranded DNA
- 3) RNA and histones
- 4) Histones and non-histones

- 3) Polysiphonia
- 4) Porphyra

100. Iodine is obtained from

- 1) **Laminaria**
- 2) Chlorella

