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# Pavzi Media

**JIPMER MBBS**

**BOTANY**

**Model Paper**

A smaller version of the Pavzi TUT logo, featuring the word 'Pavzi' in a stylized font with a red dot above the 'i', and 'TUT' below it in a similar style with a red dot above the 'i'. The letters are colored: 'P' is green, 'a' is blue, 'v' is red, 'z' is green, 'i' is blue, 'T' is red, 'U' is green, and 'T' is blue.

1. In photosynthesis carbon dioxide is converted to carbohydrates. It is a ..... process
  - 1) Reductive
  - 2) Oxidative
  - 3) Catabolic and exergonic
  - 4) **None of these**
  
2. Which of the following is not auxin?
  - 1) IAA
  - 2) IBA
  - 3) **Zeatin**
  - 4) NAA
  
3. Which of the following properties is shown by cytokinins?
  - 1) **Delay leaf senescence**
  - 2) Cause leaf abscission
  - 3) Promote seed dormancy
  - 4) Promote stomatal closing
  
4. Which of the following plant keeps its stomata open during night and closed during the day?
  - 1) Orchid
  - 2) **Cactus**
  - 3) Tea
  - 4) Wheat
  
5. Genetic dwarfism can be overcome by
  - 1) **Gibberellin**
  - 2) Ethylene
  - 3) Auxin
  - 4) ABA
  
6. Hormone inducing fruit ripening is
  - 1) Cytokinin
  - 2) **Ethylene**
  
- 3) Abscissic acid
- 4) Gibberellic acid
  
7. The year 1900 AD is highly significant for geneticists due to
  - 1) Discovery of genes
  - 2) Principle of leakage
  - 3) Chromosome theory of heredity
  - 4) **Rediscovery of Mendelism**
  
8. F<sub>1</sub> generation means
  - 1) **First filial generation**
  - 2) First seed generation
  - 3) First flowering generation
  - 4) First fertile generation
  
9. Skin color is controlled by
  - 1) Single gene
  - 2) **3 pairs of genes**
  - 3) 2 pairs of genes
  - 4) 2 pairs of genes with an intragene
  
10. Which of the following cross will produce terminal flower in garden pea?
  - 1) AA \* Aa
  - 2) AA\*aa
  - 3) **Aa\*Aa**
  - 4) Aa\*AA
  
11. Which one of the following pairs of plants are not speed producers?
  - 1) Funaria and Ficus
  - 2) **Fern and Funaria**
  - 3) Funaria and Pinus
  - 4) Ficus and Chlamydomonas

12. Which one of the following is heterosporous?

- 1) Equisetum
- 2) Dryopteris
- 3) **Salvinia**
- 4) Adiantum

13. *Cycas revoluta* is popularly known as

- 1) **Sago palm**
- 2) Royal palm
- 3) Date palm
- 4) Sea palm

14. Endosperm of gymnosperms is

- 1) **Haploid**
- 2) Tetraploid
- 3) Diploid
- 4) None of these

15. First vascular plant is

- 1) Thallophyta
- 2) **Pteridophyta**
- 3) Bryophyta
- 4) spermatophyta

16. Diatomaceous earth is obtained from

- 1) **Bacilliarophyceae**
- 2) Xanthophyceae
- 3) Rhodophyceae
- 4) Chrysophyceae

17. Which of the following is an epidermal cell containing chloroplast?

- 1) Stomata

- 2) Hydathode
- 3) **Guard cell**
- 4) None of these

18. The structures present in the roots to absorb water and minerals is

- 1) **Epidermal extensions**
- 2) Hypodermis
- 3) Endodermis
- 4) Epidermal appendages

19. Lady finger belongs to family

- 1) **Malvaceae**
- 2) Cucurbitaceae
- 3) Brassicaceae
- 4) Liliaceae

20. The interxylary phloem is found in the stem of

- 1) Cucurbita
- 2) Salvia
- 3) **Calotropis**
- 4) None of these

21. Wound healing is due to

- 1) Ventral meristem
- 2) **Secondary meristem**
- 3) Primary meristem
- 4) All of these

22. Angular collenchyma occurs in

- 1) Salvia
- 2) Helianthus
- 3) Althaea
- 4) **Cucurbita**

23. in pteridophytes, phloem is without

- 1) Bast fibers
- 2) Sieve tubes
- 3) **Companion cells**
- 4) Sieve cells

24. Agar-agar is produced by

- 1) Fungi
- 2) **Algae**
- 3) Bacteria
- 4) Blue-green algae

25. in DNA, when AGCT occurs, their association is as per which of the following pair

- 1) A-G, C-T
- 2) **A-T, G-C**
- 3) A-C, G-T, A-C, E-T
- 4) All of these

26. A segment of DNA has 120 adenine and 120 cytosine bases. The total number of nucleotides present in the segment is

- 1) 60
- 2) 240
- 3) 120
- 4) **480**

27. Lactose is composed of

- 1) Glucose + glucose
- 2) Glucose + galactose
- 3) Glucose + fructose
- 4) **Fructose + galactose**

28. Meiosis is best observed in dividing

- 1) Cell of lateral meristem

2) Cells of apical meristem

- 3) **Microsporocytes**
- 4) Microspores and anther wall

29. Masses of pollen grains, i.e., pollinia is found in

- 1) Gramineae
- 2) Solanaceae
- 3) **Orchidaceae**
- 4) Malvaceae

30. Pebrine is a disease of

- 1) **Fish**
- 2) Honey bee
- 3) Silk worm
- 4) Lac insect

31. Factor governing the earth surface

- 1) **Topographic**
- 2) Edaphic
- 3) Temperature
- 4) Biotic

32. Biological treatment of water pollution is done with the help of

- 1) Fungi
- 2) Lichen
- 3) **Phytoplanktons**
- 4) None of the above

33. Which of the following is non-symbiotic nitrogen fixer organism?

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

34. Aleurone grains are rich in

- 1) Fat
- 2) **Protein**
- 3) Carbohydrates
- 4) Auxins

35. The rupture and fractionation do not usually occur in water column in vessel/tracheids during the ascent of sap because of

- 1) Lignified thick walls
- 2) **Cohesion and adhesion**
- 3) Weak gravitational pull
- 4) Transpiration pull

36. Stability of ecosystem depends on

- 1) Primary productivity
- 2) **Interchange between producers and consumers**
- 3) Number of producers
- 4) Number of consumers

37. The material which arrests cell division is obtained from

- 1) Crocus
- 2) **Colchicum**
- 3) Dalbergis
- 4) Chysanthomum

38. *Viscum album* grown on trees. This is an example of

- 1) Symbiosis
- 2) **Parasitism**
- 3) Commensalism
- 4) Predation

39. Which of the following is responsible for biological nitrogen-fixation?

- 1) **Nife gene**
- 2) Nitrogenase
- 3) Yeast alanin t RNA Synthetase
- 4) RNA synthetase

40. The respiratory quotient during cellular respiration would depend on the

- 1) Nature of enzymes involved
- 2) **Nature of the substrate**
- 3) Amount of carbon dioxide released
- 4) Amount of oxygen utilized

41. Which of the following supports a dense population of plankton and littoral vegetation?

- 1) Oligotrophic
- 2) **Eutrophic**
- 3) Lithotrophic
- 4) Agroecotrophic

42. Choose the wrong pair

- 1) Cenchrus-Savanna
- 2) Abies-Coniferous forest
- 3) Quercus-Broad leaf forest
- 4) **Tectone-Temperate forest**

43. Rarely among angiosperms, the pollen grain influenced the endosperm. This is called as

- 1) Meta xenian
- 2) Nemec phenomenon
- 3) **Xenia**
- 4) Misogamy

44. Tyloses an outgrowth from ray or axial parenchyma cell into the lumen of a vessel, which partially or completely blocks the cavity are present in

- 1) Periderm
- 2) **Heart wood**
- 3) Sap wood
- 4) Secondary cortex

45. Overlapping region between two ecosystems is called

- 1) Biome
- 2) **Ecotone**
- 3) Niche
- 4) Photic zone

46. Phage genome site on bacterial chromosome resulted in the structure

- 1) Nucleic acid
- 2) Heterocyst
- 3) **Prophage**
- 4) None of these

47. The dominant epistasis ratio is

- 1) 9:3:3:1
- 2) **12:3:1**
- 3) 9:3:4
- 4) 9:6:1

48. Benthic organisms are found in

- 1) Surface of marine water
- 2) Middle of water in sea
- 3) **Bottom of sea**
- 4) On ground

49. Ethylene is related with

- 1) Aerobic respiration

2) **Climacteric phenomenon**

- 3) Anaerobic respiration
- 4) Fermentation

50. Maximum green house gases are released by

- 1) India
- 2) Britain
- 3) **USA**
- 4) France

51. in a coal fired power plant, electrostatic precipitators are installed to control emission of

- 1) SO<sub>2</sub>
- 2) NO<sub>2</sub>
- 3) **SPM**
- 4) CO

52. Allelic sequence variation where more than one variant allele at a locus in a human population with a frequency greater than 0.01 is referred to as

- 1) **DNA polymorphism**
- 2) Multiple allelism
- 3) SNP
- 4) EST

53. besides dung, the weed that can be used in biogas production is

- 1) Hydrilla
- 2) Solanum nigrum
- 3) **Eichhomia crassipes**
- 4) Parthenium hysterophorus

54. Jacob and Monod named some enzymes as allosteric whose activity is regulated by

- 1) **End product**
- 2) Substrate

- 3) By product
- 4) coenzyme

4) diabetes

55. The mobile genetic element is

- 1) Transposon
- 2) Mutation
- 3) **Endonucleus**
- 4) variation

60. in which one of the following, the male and female gametophytes don't have free-living independent existence?

- 1) **Pteris**
- 2) Funaria
- 3) Polytrichum
- 4) Cedrus

56. in recombinant DNA technique, the term vector refers to

- 1) **Donor DNA is identified and picked up through electrophoresis**
- 2) Plasmid, transfers DNA into living cell
- 3) Collection of entire genome in form of plasmid
- 4) Enzyme, cuts the DNA at specific sites

61. a transgenic food crop, which may help in solving the problem of nightblindness in developing countries, is

- 1) Flavr savr tomatoes
- 2) Starlink maize
- 3) BT soyabean
- 4) **Golden rice**

57. The net requirement of assimilatory power for the formation of 6 hexose molecules in maize plant is

- 1) **72 ATP, 48 NADPH**
- 2) 90 ATP, 60 NADPH
- 3) 108 ATP, 72 NADPH
- 4) 180 ATP, 72 NADPH

62. Vascular in flowering plants develop from

- 1) Phellogen
- 2) **Plerome**
- 3) Periblem
- 4) Dermatogens

58. When two unrelated individuals or lines are crossed, the performance of  $F_1$  hybrid is often superior to both of its parents. This phenomenon is called

- 1) Transformation
- 2) **Heterosis**
- 3) Splicing
- 4) Meta morphosis

63. Nitrogen-fixation in root nodules of *Alnus* is brought about by

- 1) Bradyhizobium
- 2) Clostridium
- 3) **Frankia**
- 4) Azorhizobium

59. *Rauwolfia serpentina* is used in

- 1) Curing high blood pressure
- 2) Kidney failure
- 3) **Eye defect**

64. A mature pollen grain of pinus has

- 1) 2 cells
- 2) 3 cells
- 3) **4 cells**
- 4) 5 cells

65. Quantasome is present in

- 1) Chloroplast
- 2) Mitochondria
- 3) Golgi body
- 4) Lysosome

70. Cells obtained from cancerous tumours are known as

- 1) Hybridomas
- 2) Myelomas
- 3) Lymphocytes
- 4) Monoclonal cells

66. Polyploidy can be induced by the application of

- 1) Auxin
- 2) Kinetin
- 3) Colchicine
- 4) Ethylene

71. The plant of *Triticum aestivum* is

- 1) Haplod
- 2) Diploid
- 3) Tetraploid
- 4) Hexaploid

67. In mitochondria, enzyme cytochrome oxidase is present in

- 1) Outer membrane
- 2) Perimitochondrial space
- 3) Inner membrane
- 4) Matrix

72. Which of the following is total root parasite?

- 1) *Cuscutta*
- 2) *Rafflesia*
- 3) *Santalum*
- 4) *Monotropa*

68. Which of the following bio-engineered bacteria is utilized for marine oil slicks?

- 1) *Escherichia coli*
- 2) *Pseudomonas syringae*
- 3) *Pseudomonas putida*
- 4) *Rhizoctonia solani*

73. Which of the following tissues consist of living cells?

- 1) Vessels
- 2) Tracheids
- 3) Companion cell
- 4) Sclerenchyma

69. Green potatoes are toxic due to

- 1) Phytoalexins
- 2) Solanin
- 3) Triazine
- 4) Hormones

74. Which is a useful product of epidermal origin?

- 1) Saffron
- 2) Cotton fibres
- 3) Clove
- 4) Jute

75. Fern spores are usually

- 1) Haploid
- 2) Diploid



- 3) Triploid
- 4) Tetraploid

76. When pollen tube enters through micropyle, the process is called

- 1) **Porogamy**
- 2) Chalazomy
- 3) Mesogamy
- 4) Apogamy

77. Outer wall of pollen grain is made up of

- 1) Cellulose
- 2) **Sporopollenin**
- 3) Pectocellulose
- 4) Lignin

78. Nucleotides are formed by

- 1) Purine, sugar and phosphate
- 2) Purine, pyrimidine and phosphate
- 3) **Purine, pyrimidine, sugar and phosphate**
- 4) Pyrimidine, sugar and phosphate

79. Which of the following plant cells is not surrounded by a cell wall?

- 1) Root hair cell
- 2) Stem hair cell
- 3) **Gamete cell**
- 4) Bacterial cell

80. Which of the following cell organelles stores hydrolytic enzymes?

- 1) Centriole
- 2) **Lysosome**
- 3) Chromoplast
- 4) Chloroplast

81. a monocarpic plant is one, which

- 1) Has only one carpel
- 2) **Flowers once in a life-time**
- 3) Produces only one seed
- 4) Produces only one fruit

82. AIDS virus contains

- 1) RNA with protein
- 2) DNA with protein
- 3) DNA without protein
- 4) **DNA only**

83. Calyptra develops from

- 1) **Venter wall of archegonium**
- 2) Outgrowth of gametophyte
- 3) Neck wall of archegonium
- 4) Paraphysis of the archegonical branch

84. Protonema is the stage in the life cycle of

- 1) Cycas
- 2) **Funaria**
- 3) Selaginella
- 4) Mucor

85. A fern differs from a moss in having

- 1) Swimming archegonia
- 2) Swimming antherozoids
- 3) Independent gametophytes
- 4) **Independent sporophytes**

86. Female cone of pinus is a

- 1) Modified needles
- 2) Modified long shoot

- 3) Modified dwarf shoot
- 4) **Modified scale**

87. Development of an embryo without fertilization is called as

- 1) Apomixis
- 2) Polymbryony
- 3) Parthenocarpy
- 4) **Parthenogenesis**

88. Which of the following floral parts forms pericarp after fertilization?

- 1) Nucellus
- 2) Outer integument
- 3) **Ovary wall**
- 4) Inner integument

89. Prothallus of the fern produces

- 1) Spores
- 2) Gametes
- 3) **Both (a) and (b)**
- 4) Cones

90. Which of the following cell organelles is associated with photorespiration?

- 1) Mitochondria
- 2) Peroxysome
- 3) Chloroplast
- 4) **All of these**

91. Chromosomes are arranged along the equator during

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

92. in gymnosperms, the ovule is naked because

- 1) **Ovary wall is absent**
- 2) Integuments are absent
- 3) Perinath is absent
- 4) Nucellus is absent

93. The fleshy receptacle of syconus of fig encloses a number of

- 1) **Achenes**
- 2) Samaras
- 3) Berries
- 4) Mericarps

94. A kind of biotechnology involving manipulation of DNA is

- 1) DNA replication
- 2) **Genetic engineering**
- 3) Denaturation
- 4) Renaturation

95. Minamata disease is caused due to presence of .....  
In water

- 1) Cadmium
- 2) Lead
- 3) Arsenic
- 4) **Mercury**

96. Apoenzyme is

- 1) **Protein**
- 2) Carbohydrate

- 3) Vitamin
- 4) Amino acid

97. Nucleic acid segment tagged with a radioactive molecule is called

- 1) Clone
- 2) **Probe**
- 3) Plasmid
- 4) Vector

98. Nucleic acid is absent in

- 1) Virus
- 2) Viroid
- 3) **Prion**
- 4) Mycoplasma

99. in most fungi, cell wall is chiefly made of

- 1) Cellulose
- 2) **Chitin**
- 3) Protein
- 4) Lipid

100. Heterocysts are present in

- 1) Riccia
- 2) Ulothrix
- 3) Albugo
- 4) **Nostoc**