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| Seat No. | |
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ENT - 30

Total No. of Pages : 18

P. G. Re-Entrance Examination, 2025

M. Sc. Botany

Subject Code: 58714

Day and Date : Thursday, 10-07-2024

Total Marks : 100

Time : 01.00 p.m. to 02.30 p.m.

Instructions :

- 1) All questions are compulsory
- 2) Each question carries 1 mark.
- 3) Answers should be marked in the given OMR answer sheet by darkening the appropriate option.
- 4) Follow the instructions given on OMR sheet.
- 5) Rough work shall be done on the sheet provided at the end of question paper.

1. Producers comprise the trophic level of food chain

- | | |
|----------|-----------|
| a) First | b) Second |
| c) Third | d) Fourth |

2. Parasitic plants are present.

- | | |
|-------------------------|-------------------|
| a) Haustoria | b) Clinging roots |
| c) Photosynthetic roots | d) Hydathodes |

3.enzyme is involved in breakdown of H_2O_2

- | | |
|------------|---------------|
| a) Kinase | b) Catalase |
| c) Oxidase | d) Polymerase |

4. A..... is a systematic enumeration of the plant species occurring in a given region.

- | | |
|--------------|-----------------|
| a) Flora | b) Fauna |
| c) Checklist | d) Book chapter |

5. In angiosperms seed with cotyledons are called monocotyledons
- a) one
 - b) two
 - c) three
 - d) four
6. are considered as plant amphibians.
- a) Fungi
 - b) Alga
 - c) Bryophytes
 - d) Angiosperms
7. The spores with elaters are found in
- a) Equisetum
 - b) Adiantum
 - c) Lycopodium
 - d) Marsilea
8. The pollination in Pinus takes place through
- a) insects
 - b) water
 - c) birds
 - d) wind
9. is obtained from Abies balsamea.
- a) Canada balsum
 - b) Gum
 - c) Resin
 - d) Latex
10. Rhizophore is present inplant.
- a) Riccia
 - b) Selaginella
 - c) Pteris
 - d) Cycas
- 11.....different whorls of floral parts are present in a typical flower.
- a) one
 - b) two
 - c) three
 - d) four
12. Actual union of the male gamete with the female gamete is called
- a) fertilization
 - b) pollination
 - c) megasporogenesis
 - d) microsporogenesis

13. In..... polyembryony is commonly observed.
- a) Apple
 - b) Citrus
 - c) Coconut
 - d) custard apple
14. Enzyme are
- a) Proteins
 - b) DNA
 - c) RNA
 - d) Lipid
15. The seed is fertilized
- a) Endosperm
 - b) Ovule
 - c) Stigma
 - d) Gynoecium
16. The term ecosystem was first proposed by.....
- a) Mishra
 - b) Odum
 - c) Tansley
 - d) Earnst
17. Monocots, including onions and grasses, haveroot system
- a) tuberous
 - b) fibrous
 - c) tap root
 - d) columnar
18. Leaves with petiole are referred as
- a) petiolate
 - b) sessile
 - c) stipulate
 - d) exstipulate
19. Study of internal structure of plants is called
- a) Anatomy
 - b) Cytology
 - c) Morphology
 - d) Physiology
20. tissue is the most common tissue in the plant body.
- a) Parenchyma
 - b) Sclerenchyma
 - c) Collenchyma
 - d) xylem

21. A tetrasporangiate anther contains how many microsporangia?
- a) 2
 - b) 3
 - c) 4
 - d) 5
22. What type of ovule is most commonly found in angiosperms?
- a) Anatropous
 - b) Orthotropous
 - c) Campylotropous
 - d) Amphitropous
23. Which of the following plants exhibits Chiropterophily (bat pollination)?
- a) Vallisneria
 - b) Calotropis
 - c) Kigelia
 - d) Bombax
24. Gametophytic apomixis originates from
- a) Zygote
 - b) Synergids
 - c) Antipodals
 - d) Embryo sac
25. Helobial endosperm is typically found in
- a) Monocots
 - b) Dicots
 - c) Gymnosperms
 - d) Bryophytes
26. Double fertilization involves
- a) One male gamete and egg
 - b) Two male gametes and two synergids
 - c) One male gamete and two synergids
 - d) Two male gametes, one fusing with egg and the other with polar nuclei
27. Flowers are modified
- a) Leaves
 - b) Buds
 - c) Stems
 - d) Roots

28. Pollen grains are formed inside the
- a) Ovule
 - b) Anther
 - c) Style
 - d) Sepal
29. The fusion of one male gamete with the egg is called
- a) Triple fusion
 - b) Syngamy
 - c) Pollination
 - d) Fertilization
30. The female part of the flower is called
- a) Petal
 - b) Sepal
 - c) Stamen
 - d) Pistil
31. Which component is most essential for plant life?
- a) Oxygen
 - b) Nitrogen
 - c) Water
 - d) Carbon dioxide
32. Water is transported in plants through
- a) Phloem
 - b) Xylem
 - c) Parenchyma
 - d) Collenchyma
33. Which model explains sugar movement in the phloem?
- a) Mass flow hypothesis
 - b) Pressure flow model
 - c) Diffusion theory
 - d) Osmotic gradient model
34. Transpiration is loss of water through
- a) Phloem
 - b) Roots
 - c) Stomata
 - d) Xylem

35. Which factor increases transpiration?
- a) High humidity
 - b) Wind
 - c) Low temperature
 - d) Cloud cover
36. Which is a macronutrient?
- a) Iron
 - b) Zinc
 - c) Potassium
 - d) Manganese
37. Which nutrient is absorbed passively by diffusion?
- a) Phosphorus
 - b) Nitrogen
 - c) Potassium
 - d) Calcium
38. Nutrient deficiency can be corrected by
- a) Fertilizer application
 - b) Transpiration
 - c) Hormone spraying
 - d) Pruning
39. Stress in plants is defined as
- a) Increased growth
 - b) External factor causing physiological change
 - c) Balanced metabolism
 - d) Hormonal regulation
40. PR proteins are associated with
- a) Nutrient uptake
 - b) Photosynthesis
 - c) Plant defense
 - d) Water transport
41. Which of the following is not an application of plant tissue culture?
- a) Virus elimination
 - b) Somatic hybridization
 - c) Seed coating
 - d) Micropropagation

42. The ability of a single plant cell to regenerate into a whole plant is known as.....
- a) Mutagenesis
 - b) Plasticity
 - c) Totipotency
 - d) Polyploidy
43. Which hormone combination is most favorable for root formation in tissue culture?
- a) High cytokinin and low auxin
 - b) High auxin and low cytokinin
 - c) Equal auxin and cytokinin
 - d) Only gibberellin
44. Tissue culture media must be sterilized primarily to
- a) Reduce pH
 - b) Enhance growth
 - c) Prevent microbial contamination
 - d) Improve hormone levels
45. Embryogenesis in vitro mimics
- a) Disease resistance
 - b) Natural seed development
 - c) Photosynthesis
 - d) Water uptake
46. Synthetic seeds are mainly used for
- a) Ornamentation
 - b) Hybridization
 - c) Storage and transport of somatic embryos
 - d) Detecting mutations

47. Which is not a factor affecting callus culture?
- a) Light
 - b) Temperature
 - c) Hormones
 - d) Type of fertilizer used in soil
48. Which of the following is NOT a method of plant gene transfer?
- a) Biolistics
 - b) *Agrobacterium tumefaciens*
 - c) Electroporation
 - d) Grafting
49. The T-DNA region in *Agrobacterium* is transferred to
- a) Chloroplast DNA
 - b) Mitochondrial DNA
 - c) Plant nuclear genome
 - d) RNA
50. A transgenic plant is defined as one that
- a) Has been cross-pollinated
 - b) Has undergone mutation
 - c) Contains foreign gene integrated into its genome
 - d) Is sterile
51. Which branch of horticulture deals with the cultivation of fruits?
- a) Olericulture
 - b) Floriculture
 - c) Pomology
 - d) Landscaping
52. Drip irrigation is especially suitable for
- a) Rice fields.
 - b) Dryland farming
 - c) Large field crops
 - d) Water-intensive crops
53. Which of the following is a plant growth regulator (PGR)?
- a) Nitrogen
 - b) Auxin
 - c) Urea
 - d) Potash

54. Which method is used in hydroponics?
- a) Cultivation in sand
 - b) Cultivation in water without soil
 - c) Cultivation in compost
 - d) Cultivation in manure
55. Rose belongs to which category in floriculture?
- a) Seasonal flower
 - b) Cut flower
 - c) Indoor plant
 - d) Bedding plant
56. Which pest commonly affects Gerbera cultivation?
- a) Aphids
 - b) Caterpillars
 - c) Mites
 - d) Mealybugs
57. Salt is used in preservation of fruits by
- a) Enhancing flavor
 - b) Preventing oxidation
 - c) Inhibiting microbial growth
 - d) Increasing sugar content
58. Which of the following is NOT involved in Brinjal cultivation?
- a) High nitrogen dose at fruiting
 - b) Regular weeding
 - c) Mulching
 - d) Pruning
59. IPR stands for
- a) Indian Plant Rights
 - b) Intellectual Property Rights
 - c) International Plant Registry
 - d) Irrigation and Pesticide Regulation

60. The National Horticulture Board (NHB) works under which ministry?
- a) Ministry of Education
 - b) Ministry of Environment
 - c) Ministry of Agriculture
 - d) Ministry of Commerce
61. Which class of carbohydrate is starch?
- a) Monosaccharide
 - b) Disaccharide
 - c) Polysaccharide
 - d) Oligosaccharide
62. Which carbohydrate is used for quick energy in plants?
- a) Cellulose
 - b) Glucose
 - c) Sucrose
 - d) Lactose
63. What property makes unsaturated fatty acids liquid at room temperature?
- a) Presence of oxygen
 - b) Presence of double bonds
 - c) Large molecular size
 - d) High boiling point
64. Which of the following is a lipid?
- a) Protein
 - b) DNA
 - c) Phospholipid
 - d) Cellulose
65. Which method is used to prepare a scientific presentation for conferences?
- a) Oral and poster presentation
 - b) Survey method
 - c) Microscopy
 - d) DNA fingerprinting

66. Which of the following is a visual documentation tool in microscopy?

- a) Petri plate
- b) Camera Lucida
- c) Bunsen burner
- d) PCR machine

67. Which instrument helps in measuring minute structures in microscopy?

- a) Camera Lucida
- b) pH meter
- c) Micrometer
- d) Dissecting kit

68. One of the risks in research writing without proper citations is

- a) Peer review
- b) Plagiarism
- c) Low clarity
- d) Word limit

69. Library research typically involves

- a) Field surveys
- b) Lab experiments
- c) Book and journal review
- d) Statistical analysis

70. Which of the following is a non-renewable natural resource?

- a) Water
- b) Soil
- c) Fossil fuels
- d) Forest

71. Sustainable utilization of resources means

- a) Overexploitation for economic growth
- b) Ignoring future generations.
- c) Balanced use without depletion
- d) Using only synthetic materials

72. Minor forest products include

- a) Timber
- b) Petroleum
- c) Gurn and resins
- d) Coal

73. What is GIS used for in resource management?

- a) Genetic improvement of plants
- b) Geographical data analysis
- c) Herbal authentication
- d) Soil pollution

74. Carbon credit is a concept associated with

- a) Soil fertility
- b) Forest depletion
- c) Climate change mitigation
- d) Groundwater recharge

75. Which of the following is used to authenticate medicinal plants?

- a) Taste test
- b) Morphological characteristics
- c) Internet search
- d) DNA fingerprint only

76. Which part of *Tinospora cordifolia* is used medicinally?

- a) Leaf
- b) Stem
- c) Fruit
- d) Flower

77. Which herb is well-known for its use in immunity boosting?

- a) Aloe vera
- b) *Withania somnifera*
- c) *Tinospora cordifolia*
- d) *Phyllanthus emblica*

78. Adulteration in herbal drugs refers to

- a) Proper preservation
- b) Intentional or unintentional mixing with inferior material
- c) Sustainable use
- d) Carbon reduction.

79. Which plant is used for preparing herbal shampoo?

- a) *Rosa indica*
c) *Santalum album*
- b) *Sapindus laurifolius*
d) *Lawsonia inermis*

80. Perfume preparation uses which plant?

- a) *Rosa indica*
c) *Withania somnifera*
- b) *Senegalia concinna*
d) *Tinospora cordifolia*

81. The term "plant diversity" refers to

- a) Only genetic modifications in plants
- b) Range of variation in plant species and habitats
- c) Invasive species spread
- d) Agricultural biotechnology

82. Ethical value of plant diversity emphasizes

- a) Only market price
- b) Ecological roles only
- c) Moral responsibility to conserve
- d) Reproductive technology

83. Which conservation method preserves species in natural habitat?

- a) Ex-situ b) In-vitro
- c) In-situ d) Synthetic

84. Botanical Survey of India (BSI) is involved in

- Wildlife protection
- Genetic engineering
- Documentation of plant species
- Export of herbal medicine.

85. The Biodiversity Act (2002) aims to
- a) Regulate biotech companies
 - b) Control agriculture
 - c) Conserve and use biodiversity sustainably
 - d) Ban traditional knowledge
86. *Tribulus terrestris* is traditionally used to treat
- a) Joint pain
 - b) Infertility and urinary disorders
 - c) Malaria
 - d) Cough
87. *Pongamia pinnata* is mainly used for
- a) Edible oil
 - b) Biofuel and skin ailments
 - c) Textile coloring
 - d) Hair growth
88. The objective of ethnobotany is to
- a) Engineer new plant species
 - b) Study plant-insect interactions
 - c) Document traditional plant knowledge.
 - d) Focus on synthetic products
89. Which plant is used in fever and malaria treatments?
- a) *Vitex negundo*
 - b) *Boerhavia diffusa*
 - c) *Artemisia annua*
 - d) *Andrographis paniculata*
90. Ethnic communities help conserve plant diversity by
- a) Ignoring plant usage
 - b) Avoiding rituals
 - c) Preserving knowledge and plant habitats
 - d) Cutting forests

91. What is the main aim of plant breeding?
- a) Soil improvement
 - b) Pest control
 - c) Development of improved plant varieties
 - d) Plant taxonomy
92. Which of the following is NOT a method of plant selection?
- a) Mass selection
 - b) Pure line selection.
 - c) Hybridization
 - d) Clonal selection
93. Clonal selection is mainly applied in.....
- a) Self-pollinated crops
 - b) Cross-pollinated crops
 - c) Asexually propagated crops
 - d) Genetically engineered crops
94. What does 'Gamma Garden' refer to?
- a) Organic gardening
 - b) Botanical conservatory
 - c) Area for mutation breeding using radiation
 - d) Tissue culture lab
95. Male sterility is important in
- a) Clonal selection
 - b) Avoiding mutations
 - c) Hybrid seed production
 - d) Genetic erosion
96. Which tool is used to compare DNA sequences?
- a) PIR
 - b) BLAST
 - c) MODELLER
 - d) Excel

97. NCBI is a resource for

- a) Environmental statistics
- b) Biological databases and genome data
- c) Agricultural machinery
- d) Medical diagnostics only

98. Protein Information Resource (PIR) provides

- a) Protein structural models
- b) Plant genomes only
- c) Statistical graphs
- d) Phylogenetic trees

99. Which of these is a graphical method of data presentation?

- a) BLAST
- b) Histogram
- c) Chi-square
- d) NCBI

100. The average of a data set is termed as

- a) Median
- b) Range
- c) Arithmetic mean
- d) Mode



Rough

Rough