

**Ph.D. COMMON ENTRANCE TEST**

**SUBJECT: BOTANY**

**Roll No:**

**PART B**

**Duration: 60 minutes Maximum Marks: 50**

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| **Instructions:**   1. **This entrance test question paper is not to be taken out of the examination hall** 2. **Part B Question paper consists of Section A and Section B** 3. **Section A consists of 30 MCQs carrying 1 Mark each. Put a tick (√) mark against the correct answer in the box given.** 4. **Section B consists of Descriptive questions carrying 5 marks each. Restrict your answer to 500 words. Additional plain sheets have been attached to the question paper to answer Section B** |

**SECTION – A**

**Answer the following by ticking (√) against the correct answer in the box given:**

1. Sugar moves in Phloem vessels as **30 X 1 = 30**

1. Cellulose
2. Glucose
3. Starch
4. Sucrose

2. What is the site of the light-dependent reactions?

1. Stroma
2. Thylakoids
3. Chemiosmosis
4. Chloroplast

3. ATP synthesis during light reaction is

1. Photophosphorylation
2. Photolysis
3. Oxidative Phosphorylation
4. Phosporylation

4. Which of the Phytohormones play a role in seed dormancy?

1. Gibberellins
2. ABA
3. Cytokinin
4. Auxins

5. Both Chloroplast and Mitochondria

1. are found within the nucleus
2. have linear DNA
3. carry extranuclear genes
4. display a Mendelian pattern of inheritance

6. Bamboo and grasses elongate by activity of

1. Secondary meristems
2. Lateral meristems
3. Apical meristem
4. Intercalary meristem

7. In a cross section of a tree or log, one of the ribbons of tissue extending radially from the pith

form

1. Cortical rays
2. Necrotic rays
3. Medullary rays
4. All of these

8. Restriction endonuclease are often called as

1. Cosmids
2. Vector
3. Molecular scissors
4. DNA insert

9. Southern Hybridization is

1. Used to identify a specific DNA
2. Used to Identify both DNA and RNA
3. Used to identify a specific protein
4. Used to identify a specific RNA

10. Who is known as father of tissue culture?

1. Bonner
2. Haberlandt
3. Laibach
4. Gautheret

11. Which of the following occurs during Meiosis but not during Mitosis

1. Chromosomes align at the metaphase plate
2. Chromosomes condense
3. Chromosomes migrate to opposite poles
4. Synapsis

12. The source of CO2 during Calvin cycle in C4 plants is

1. Malic acid
2. OAA
3. PEP
4. RuDP

13. Which part of a plant cell is thought to aid plants in sensing gravity in their roots?

1. Amyloplasts
2. Chloroplasts
3. Nucleus
4. Mitochondria

14. Instead of a Phylum, in plants we use which category?

1. Division
2. Sub-species
3. Sub-Kingdom
4. Class

15. According to current code of Botanical Nomenclature, the names of Class must end with

1. opsida
2. idae
3. ales
4. aceae

16. A group of freely inter-breeding organisms constitutes a

1. Species
2. Genera
3. Family
4. Class

17. The ovary is half inferior in flowers of

1. Guava
2. Peach
3. Cucumber
4. Cotton

18. Ginger multiplies vegetatively by

1. bud
2. stem
3. tuber
4. rhizome

19. The national herbarium in our country is located in

1. Mumbai
2. Kolkata
3. Chennai
4. Delhi

20. Which of the following is dominated by plants that drop their leaves yearly to conserve

water?

1. Desert
2. Coniferous forest
3. Tropical rain forest
4. Deciduous forest

21. The number of individuals per unit area determines the population’s

1. Survivorship
2. Mortality
3. Age distribution
4. Density

22. Geometric growth produces what type of population growth curve?

1. S-shaped
2. J-shaped
3. L-shaped
4. K-shaped

23. Which of the following is a pioneer tree species coming up first after a land slide canopy

opening?

1. *Mangifera indica*
2. *Macaranga peltata*
3. *Myristica fragrans*
4. *Vateria indica*

24. Important family character of Rubiaceae for identification in field is

1. Lateral stipules
2. Interpetiolar stipules
3. Terminal stipules
4. None of the above

25. Ecological succession on sand is

1. Psammosere
2. Xerosere
3. Halosere
4. Hydrosere

26. Exotic species

1. are often endangered
2. usually increase biodiversity
3. often enhance the habitat for native species
4. Usually reduce biodiversity

27. Evolutionary change and relationships of related organisms are represented in

1. Linkage trees
2. Phylogenetic trees
3. Lineage trees
4. Relationship trees

28. Which technique is used to introduce genes into dicots?

1. Electroporation
2. Particle acceleration
3. Microinjection
4. Ti plasmid infection

29. Endemic species are those that:

1. are native to certain area
2. Were native earlier, now no longer occur there
3. Restricted to certain locality and nowhere else found
4. Introduced to certain area from elsewhere

30. Which acronym indicates a multilateral treaty signed in 1773 that establishes an international

system of import and export permits to regulate international commerce in species

designated for protection?

1. IUCN
2. MEA
3. CITES
4. SLOSS

**SECTION – B**

**Answer any four of the following: 4 X 5 = 20**

1. Explain the different stages of Meiotic cell division.

2. Write notes on different steps involved in Calvin cycle.

3. Write critical notes on physiological effects of Abscisic acid (ABA) on plants.

4. Discuss various herbarium techniques and its importance.

5. Give an account of phytogeographical vegetation zones of India.

6. Explain different types of *in-situ* and *ex-situ* conservation of plants.

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