

M.Sc. BOTANY
FOURTH SEMESTER
PLANT RESOURCE UTILIZATION AND CONSERVATION
MSB-405 (MDC)
[USE OMR SHEET FOR OBJECTIVE PART]

SET
B

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

(Objective)

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. Plasmids are used as cloning vectors for which of the following reasons?
 - a. Can be multiplied in culture
 - b. Self-replication in bacterial cells
 - c. Can be multiplied in laboratories with the help of enzymes
 - d. Replicate freely outside bacterial cells
2. Colchicine induces polyploidy by:
 - a. Inhibiting cell division
 - b. Promoting cell division
 - c. Inhibiting spindle formation
 - d. Doubling the chromosome size
3. Chemically, plant fibers are mainly composed of:
 - a. Proteins
 - b. Chitin
 - c. Cellulose
 - d. Fats
4. Potato tuber is the swollen part of:
 - a. Underground stem
 - b. Root
 - c. Rhizome
 - d. Fruit
5. Oats belongs to the family:
 - a. Solanaceae
 - b. Asteraceae
 - c. Poaceae
 - d. Musaceae
6. Which soil is best for cotton cultivation?
 - a. Peat soil
 - b. Sandy soil
 - c. Red soil
 - d. Black soil
7. Technically, bamboo is type of:
 - a. Grass
 - b. Heart wood
 - c. Fungus
 - d. Herb
8. When a threatened plant needs urgent measures to save it from extinction, the desirable approach is:
 - a. In situ conservation
 - b. Ex situ conservation
 - c. Cryopreservation
 - d. Biopreservation
9. Field gene bank is the most common method of conserving genetic resources with:
 - a. Spores
 - b. Orthodox seeds
 - c. Pollen grains
 - d. Recalcitrant seeds

10. The Botanical Garden and the National Botanical Research Institute are located respectively at:
 a. Pune and Howrah
 b. Howrah and Lucknow
 c. Darjeeling and Lucknow
 d. Shimla and Dehradun
11. The DNA fragments have sticky ends due to:
 a. Endonuclease
 b. Unpaired bases
 c. Calcium ions
 d. Free methylation
12. Which is a genetically modified crop?
 a. Bt-cotton
 b. Bt-brinjal
 c. Golden rice
 d. All
13. *Triticum aestivum* is a polyploidy with genomes from:
 a. *Triticum monococum* & *Aegilopss peitoedus*
 b. *Aegilopss peitoedus* & *Aegilopss quarrosa*
 c. *Aegilopss squarrosa* & *Triticum monococum*
 d. *Triticum monococum*, *Aegilopss peitoedus* & *Aegilopss quarrosa*
14. The study of traditional medicine:
 a. Herbalism
 b. Ethnomedicine
 c. Ayurveda
 d. Chinese medicine
15. Rice is originated from:
 a. America
 b. India
 c. China
 d. Africa
16. *Illicium griffithii* is a:
 a. Food plant
 b. Medicinal plant
 c. Fodder plant
 d. Firewood plant
17. Hardwood is obtained from:
 a. *Bambosa spp.*
 b. *Cedrus spp.*
 c. *Pinus kesiya*
 d. *Dipterocarpus macrocarpus*
18. Which one of these does NOT refer to the direct use of forest products?
 a. Timber
 b. Medicine
 c. Gums and resins
 d. Bamboo for baskets
19. Critically Endangered is the highest risk category assigned by the IUCN for:
 a. Domesticated species
 b. Exotic species
 c. All of the above
 d. Wild species
20. Rainforest of the sea:
 a. Algae
 b. Kelp forest
 c. Coral reef
 d. All of the above

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(Descriptive)

Time : 2 hr. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

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| 1. What is genetic engineering? Describe the process of Agrobacterium bacterium mediated gene transfer with proper diagrams. | 2+8=10 |
| 2. What is ploidy? What are the different types of ploidy? Describe polyploidy with an example. Mention the role of polyploidy in crop improvement. | 1+2+4+3=10 |
| 3. What are fodder crops? Write Origin, Botany and Uses of Oats. | 2+2+3+3=10 |
| 4. Write geographical distribution and uses of the following:
a) <i>Illicium griffithii</i>
b) Bamboos | 5+5=10 |
| 5. Discuss classification of Food plants. Write short note on:
a) Cultivation practices of Rice
b) Importance of Rice | 4+3+3=10 |
| 6. Discuss two important fire wood and timber yielding plants of Northeast India. | 5+5=10 |
| 7. What is In situ conservation? Discuss in details the international and Indian initiatives taken for In situ conservation. | 2+8=10 |
| 8. Write short note on:
a) Field gene bank
b) Principles and practices of Ex situ conservation | 5×2=10 |

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