

**M.Sc. BOTANY  
FOURTH SEMESTER  
ANGIOSPERM TAXONOMY  
MSB-401 C**

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

**(Objective)**

Marks: 20

*Choose the correct answer from the following:*

*1 × 20 = 20*

- Which plant product is a natural source of vitamin C?  
a. Wheat  
b. Soybean  
c. Orange  
d. Cotton
- Which part of the plant is commonly used for medicinal purposes?  
a. Inflorescence  
b. Leaves  
c. Fruits  
d. All parts of the plant
- Hotspots are regions of high:  
a. Rarity  
b. Endangered population  
c. Diversity  
d. Endemism
- The National Botanical Research Institute (NBRI) is located at:  
a. Delhi  
b. Gangtok  
c. Lucknow  
d. Dehradun
- Which scientist is credited with pioneering the theory of centers of origin of cultivated plants?  
a. Charles Darwin  
b. Gregor Mendel  
c. Nikolai Vavilov  
d. Carl Linnaeus
- Plant introduction involves:  
a. Exclusively transferring plants from one farm to another  
b. Introducing new plant species or varieties to regions where they are not native  
c. Reducing the genetic diversity of crops  
d. Stopping the cultivation of certain plant species
- Where did rice cultivation originate?  
a. West Africa  
b. Southeast Asia  
c. Mediterranean region  
d. Central Europe
- Which conservation strategy focuses on protecting species and habitats outside of nature reserves?  
a. In-situ conservation  
b. Ex-situ conservation  
c. Habitat restoration  
d. Landscape conservation
- Which of the following is a major threat to biodiversity?  
a. Habitat destruction  
b. Climate change  
c. Invasive species  
d. All of the above

10. Which level of biodiversity refers to the variety of ecosystems in a region?
  - a. Genetic diversity
  - b. Species diversity
  - c. Ecological diversity
  - d. Population diversity
11. What is a common impact of invasive species on native ecosystems?
  - a. Decreased competition for resources
  - b. Increased biodiversity
  - c. Disruption of ecological balance
  - d. Enhanced ecosystem resilience
12. Which part of *Paris polyphylla* is commonly used for medicinal purposes?
  - a. Leaves
  - b. Seeds
  - c. Roots
  - d. Flowers
13. Which of the following is an example of a value-added product from medicinal plants?
  - a. Fresh leaves
  - b. Herbal tea blend
  - c. Tree bark
  - d. Dried roots
14. What is a potential consequence of overexploitation of medicinal plants?
  - a. Species depletion and loss
  - b. Enhanced ecosystem resilience
  - c. Conservation of natural habitats
  - d. Increased biodiversity
15. Cloves (*Syzygium aromaticum*) are the aromatic:
  - a. Flower buds
  - b. Fruits
  - c. Seeds
  - d. Rhizomes
16. How many biodiversity hotspots are located in Northeast India?
  - a. 1
  - b. 2
  - c. 3
  - d. 4
17. Which of the following is NOT a type of plant secondary metabolite?
  - a. Alkaloids
  - b. Glycosides
  - c. Terpenoids
  - d. Proteins
18. The modified leaf that protects a developing flower is called a:
  - a. Stamen
  - b. Petal
  - c. Pistil
  - d. Sepal
19. In numerical taxonomy, what does the term "phenetics" refer to?
  - a. Classifying organisms based on genetic relatedness
  - b. Quantifying morphological variation for classification
  - c. Studying the ecological niche of species
  - d. Analyzing behavioral patterns within populations
20. Which of the following is NOT a step in conducting a numerical morphometric analysis?
  - a. Sequencing DNA samples
  - b. Standardizing measurements
  - c. Collecting morphological data
  - d. Analyzing data using statistical techniques

( Descriptive )

Time : 2 hr. 30 mins.

Marks : 50

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

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| 1. Discuss the following:  | 5+5=10   |
| a) Livelihood opportunities due to medicinal plants.   |          |
| b) Short note on <i>Illicium griffithii</i> Hoo k.f. & Thomson.  |          |
| 2. What is the significance of plants and plant products in human society, and how do they contribute to various aspects of our lives, including food, medicine, industry, and environmental sustainability?                                   | 4+6=10   |
| 3. Define the scope of biodiversity and identify key threats to biodiversity in today's ecosystems.  | 4+6=10   |
| 4. What are the primary introduction pathways for invasive species, and how do these species impact both terrestrial and aquatic ecosystems biologically?  | 5+5=10   |
| 5. Describe Vavilov's classification of primary centres of origin for cultivated plants, citing specific examples from different regions worldwide. How did Vavilov's work influence our understanding of crop domestication and gene centres? | 5+5=10   |
| 6. What are secondary metabolites, and how can they be analysed in plants using various methods?   | 2+8=10   |
| 7. Discuss the historical development and key aspects of numerical taxonomy.   | 5+5=10   |
| 8. What are the merits, demerits, and practical applications of numerical taxonomy, as viewed by Sneath and Sokal?   | 3+3+4=10 |

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