

M.Sc. 4th Semester Examination, 2021

SUBJECT: BOTANY

Core Course: 404EA C (T)

Course ID: 41354

Course Title: Taxonomy of Angiosperms and Biosystematics

Time: 2Hours

Full Marks: 30

1. Answer *any four* of the following: 1x4=4

- (a) What is genomics?
- (b) What is DNA barcoding?
- (c) What do you mean by the theory of tolerance regarding plant distribution?
- (d) What is vicariance?
- (e) Define haplotypes.
- (f) What is meant by reverse taxonomy?
- (g) What is epigenetics?
- (h) What are P and S type of sieve tube plastids?

2. Answer *any two* of the following: 5x2=10

- (a) Discuss the most widely accepted categories of biosystematics in order of ascending phyletic value and relate these with the classical categories. 3+2=5
- (b) Write the role of computer and GIS in taxonomic studies. 2+3=5
- (c) What is palynology? How pollen characters have helped in phylogenetic considerations of various taxa? 2+3=5
- (d) Define endemism. Write the different types of endemic with examples. 2+3=5

3. Answer *any two* of the following: 8x2=16

(a) Discuss the role of micromorphological characters in the field of plant systematics. 8

(b) Elucidate the applications of taxonomic markers from both nuclear and chloroplast genomes in the interpretation of phylogeny.

4+4=8

(c) What is phenotypic plasticity? Discuss its distinctions from genetic variability and state its significance. $2+6=8$

(d) Explain the importance of 18S and 5.8S genes of rDNA as taxonomic markers. Why is the 26S gene of rDNA less useful in taxonomy? $6+2=8$