P.G. Semester-IV Examination, 2023

BOTANY

Course ID : 41354 **Course Code : BOT-404EA(TH)**

Course Title : Taxonomy of Angiosperms and Biosystematics

Time : 2 Hours Full Marks : 30

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **four** of the following: 1×4=4
   a) What is genonomy?
   b) What is reverse taxonomy?
   c) Write the full form of ISPN.
   d) What are p and s type of sieve tube plastids?
   e) Define haplotypes.
   f) What is phylogram?
   g) What are non-sementide macromolecules?
   h) What is phenotypic plasticity?
2. Answer any **two** of the following: 5×2=10
   a) Define Biosystematics. How does it differ from classical taxonomy? 2+3=5

   b) Write the role of computer and GIS in taxonomic studies. $2\frac{1}{2}+2\frac{1}{2}=5$
   c) What is endemism? Distinguish between palaeoendemics and neoendemis with examples. Name one endemic family found in the southern hemisphere of the globe. 2+2+1=5
   d) What is palynology? How pollen characters have helped in phylogenetic consideration of various taxa? 2+3=5
3. Answer any **two** of the following: 8×2=16
   a) Discuss the role of micromorphological characters in the field of plant systematics. 8
   b) Briefly describe the chloroplast genome naming its taxonomically suitable markers. Citing examples, discuss the advantages of using these markers in taxonomy. 4+4=8
   c) Elucidate the importance of 18S and 5.5S genes of rDNA as taxonomic markers. Why is the 26S gene of rDNA less useful in taxonomy? 5+3=8
   d) What is cytotaxonomy? Write the basic cytological characters of taxonomic significance. 2+6=8

———