14BTP14

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION DECEMBER 2018
(Third Semester)

Branch **BIOTECHNOLOGY**

PLANT BIOTECHNOLOGY

Time: Three Hours Maximum: 75 Marks

Answer **ALL** questions
ALL questions carry **EQUAL** marks (2 + 5+ 8)

1 a What is the organization of DNA?
b Describe molecular structure of chloroplast DNA.
c Explain levels of nuclear organisation.

OR

d What is the chloroplast and its function?
e Write notes on size and composition of plant mitochondrial DNA.
f Explain ultrastructure and functions of chloroplasts.

2 a What are the different types of pollination?
b Write notes on basic technique of plant tissue culture,
c Briefly explain methods of protoplast fusion.

OR

d What is Totipotency?
e Write notes on germplasm conservation of plant genetic materials,
f Briefly explain suspension cultures.

3 a What are secondary metabolites examples?
b Explain method of artificial seed production and their applications,
c .Discuss in vitro production of secondary metabolites.

OR

d What is a synthetic seed?
e What are phytochemicals? How do phytochemicals work?
f Explain flavonoid pathway and its biological importance.

4 a What is the Roundup Ready gene?
b How were virus resistant transgenic plants obtained?
c Briefly explain Agrobacterium mediated gene transfer in plant.

OR

d What is gene silencing in plants?
e Give account on Particle Bombardment gene transfer,
f Explain the steps involved in production of virus free and herbicide resistance transgenic plants.

5 a What is the difference between remote sensing and GIS?
b Outline the RFLP analysis as a molecular marker in plant breeding,
c Discuss the applications of RNA interference.

OR

d What is QTL mapping in plants?
e Write notes on DNA Bar coding in plant.