Registration No : | | | | | | | | | | |

Total Number of Pages : 02 **M.Pharm**
M.PH2F.6

2nd Semester Regular / Back Examination 2018-19
ADVANCED PHARMACOGNOSY - II (MEDICINAL PLANT BIOTECHNOLOGY)
BRANCH : PHARMACOGNOSY
Time : 3 Hours
Max Marks : 70
Q.CODE : F397
Answer Question No.1 which is compulsory and any FIVE from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions :** **(2 x 10)**

a) Write the name of the scientist, who first discussed the concept of cellular totipotency.

b) State the year, when Mitsui Petrochemicals Ltd. Japan introduced the first industrial production of Shikonin by suspension culture.

c) Write about the major inorganic nutrients required for preparation of plant tissue culture media.

d) Why carbon source is included in the composition of plant tissue culture media?

e) How the explants are generally sterilized during plant tissue culture?

f) Why Auxins are added to plant tissue culture media?

g) State one example of biotransformation of secondary compounds by plant tissue culture technique.

h) Write the name of the amino acid, from which the indole alkaloids are biosynthesized.

i) Write the name of the pathway by which isoprenoid compounds are biosynthesized.

j) State the precursors for biosynthesis of anthraquinone derivatives.

Q2 **a)** Explain the concept of cellular totipotency. **(5)**

b) Distinguish between Organogenesis and Embryogenesis. **(5)**

Q3 **a)** Explain the process of protoplast fusion. **(5)**

b) Illustrate the advantages of plant cell immobilization techniques especially on secondary metabolism. **(5)**

Q4 **a)** Illustrate the techniques employed in elucidation of biosynthetic pathway. **(5)**

b) Illustrate the applications of plant tissue culture technique in pharmacy and allied fields. **(5)**

Q5 **a)** Explain the induced production of biomedicinals in presence of various elicitors by citing few examples. **(5)**

b) Explain the strategies employed for the development of high yielding cell lines. **(5)**

Q6 Discuss the general requirements of a plant tissue culture laboratory. Enumerate the types and techniques of plant tissue culture. **(10)**

Q7 Describe the biogenesis of tropane alkaloids and flavonoids. **(10)**

Q8 **Write short answer on any TWO :** **(5 x 2)**

a) Artificial seeds

b) Bioreactors

c) Cryopreservation