

Day : Monday  
Date : 19/11/2018

W-2018-4094

Time: 10.00 A.M. TO 01.00 P.M.  
Max. Marks: 60

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**N. B.:**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt any **TWO** questions from each section.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answers to both the sections should be written in **SEPARATE** answer book.
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**SECTION-I**

- Q.1** Answer any **FIVE** of the following: **(10)**
- a) Define and difference between callus and suspension culture?
  - b) What is Substitutions?
  - c) Define Growth curve and give growth phases.
  - d) Compare Moisture content and Loss on drying.
  - e) What is Foaming Index?
  - f) What are growth parameters?
- Q.2** Write an exhaustive note on protocol to establish plant cells under *in-vitro* conditions. Give various strategies used for the enhancement of phytopharmaceuticals from plant tissue culture. **(10)**
- Q.3**
- a) Give in detail standardization of crude drugs as per WHO guidelines. **(06)**
  - b) Explain chemical evaluation of crude drugs. **(04)**
- Q.4** Attempt any **TWO** of the following: **(10)**
- a) Swelling Index
  - b) Leaf constants
  - c) Morphological evaluation of crude drugs
  - d) Bitterness value

**SECTION-II**

- Q.5** Answer any **FIVE** of the following: **(10)**
- a) Compare Maceration and Infusion.
  - b) Give difference between cotton and silk.
  - c) What is extraction?
  - d) Give biological source and chemical constituents of Gokharu.
  - e) Give biological source and chemical constituents of Guggul.
  - f) What is percolation?
- Q.6** Explain methods and purpose of extraction. Discuss the principle, application and advantage of microwave assisted extraction. **(10)**
- Q.7**
- a) Write exhaustive note on Super critical fluid extraction. Give its applications and limitations. **(06)**
  - b) Write the pharmacognostic details, toxicity and marketed formulations of Shatavari. **(04)**
- Q.8** Attempt any **TWO** of the following: **(10)**
- a) Kaolin
  - b) Vachaa
  - c) Tulsi
  - d) Draw Soxhlet apparatus and explain its working