

## MANIPAL UNIVERSITY

## FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: ADVANCED PHARMACOGNOSY AND PHYTOCHEMISTRY (PCO 601T)  
(SPECIALIZATION: PHARMACOGNOSY)  
(2014 REGULATION)

Wednesday, May 18, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ **Answer ALL the questions.**

1. How Ginger and Opium is cultivated, collected and processed for market? Explain. (10 marks)
2. Discuss the role of IR spectroscopy and Fluorescence analysis in characterisation of phyto-constituents in detail. (10 marks)
3. Give a detailed account of phyto-chemistry of Resins. (10 marks)
4. What are Pests? Write a detailed account of pest control methods. (10 marks)
5. Describe the source, constituents and uses of any four phyto-constituents used as antidiabetics. (10 marks)
6. How will you elucidate the structure of Cholesterol by chemical methods? (10 marks)
7. What are Cyanogenetic glycosides? Give the biogenesis and test for identity with a suitable example. (10 marks)
8. Give an account of chemistry and identification tests for Anthracene and Cardiac glycosides. (10 marks)
9. **Write short notes:**
  - 9A. Vitamin C as dietary anti-oxidant
  - 9B. Chemical characters as guides for classification of crude drugs(5+5 = 10 marks)
10. **Write briefly on the following:**
  - 10A. International organisations involved in the conservation of medicinal plants
  - 10B. Anticancer agents from Marine origin(5+5 = 10 marks)



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## FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: HERBAL PRODUCT DEVELOPMENT AND FORMULATION (PCO 602T)  
(SPECIALIZATION: PHARMACOGNOSY)  
(2014 REGULATION)

Friday, May 20, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

## ✍ Answer ALL the questions.

1. Describe the regulatory requirements for herbal medicines in different countries at the global level. (10 marks)
2. Discuss the role of plastic as material of construction for packaging of herbal preparations. (10 marks)
3. Discuss the pre-formulation studies on ointments and creams. (10 marks)
4. Describe the various quality control tests for liquid orals. (10 marks)
5. How the cGMP came in to existence and discuss its components in detail. (10 marks)
6. Write an essay on the standardization of herbal extracts with an example. (10 marks)
7. How the choice of solvent will affect the extraction of raw materials? (10 marks)
8. Briefly discuss the different classes of natural products used in nutraceuticals. (10 marks)
9. Write short notes:
  - 9A. Vehicles used in herbal liquid orals
  - 9B. Determination of heavy metals in herbal medicine(5 marks × 2 = 10 marks)
10. Write briefly on the following:
  - 10A. Herb-Drug and Herb –Herb interactions
  - 10B. Bitterness value and its significance(5 marks × 2 = 10 marks)



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### FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2016

**SUBJECT: MEDICINAL PLANT BIOTECHNOLOGY (PCO 603T)**  
**(SPECIALIZATION: PHARMACOGNOSY)**  
**(2014 REGULATION)**

Monday, May 23, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

**Answer ALL questions.**

1. Explain isolation techniques of protoplast. (10 marks)
2. Give an account of immobilised plant cell culture systems. (10 marks)
3. Give a detailed account of biotransformation in pharmacy with special reference to culture methods and precursors. (10 marks)
4. Describe methods for screening and selection of high yielding cell lines. (10 marks)
5. Give a detailed account of plant cell cloning. (10 marks)
6. How hairy root culture is established and give its applications. (10 marks)
7. Why plant cells are immobilized and explain the techniques of immobilization. (10 marks)
8. Discuss various methods of protoplast fusion. (10 marks)
9. **Write short notes:**
  - 9A. What are the general requirements for embryogenesis?
  - 9B. Explain suitable methods for detecting pathogens in plants(5 marks × 2 = 10 marks)
10. **Write briefly on the following:**
  - 10A. Give the applications of plant tissue culture.
  - 10B. Write a note on elicitors.(5 marks × 2 = 10 marks)



## MANIPAL UNIVERSITY

## FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2016

SUBJECT: BIOLOGICAL SCREENING OF HERBAL DRUGS (PCO 604T)  
(SPECIALIZATION: PHARMACOGNOSY)  
(2014 REGULATION)

Wednesday, May 25, 2016

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

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✍ Answer ALL questions.

1. What are transgenic animals? Discuss the production and maintenance of transgenic animals and add a note on its applications. (10 marks)
2. What is drug screening? Briefly discuss various *in vivo* screening methods for antifertility activity. (10 marks)
3. Give an account of analysis of variance and Chi-square test. (10 marks)
4. What is Cross over design? Give its details, advantages and draw backs. (10 marks)
5. What is Nephrotoxicity? Discuss various models used in screening for nephron-protective activity. (10 marks)
6. Define osteoporosis. Give the types, induction of osteoporosis and one method of screening. (10 marks)
7. Describe the application of granuloma pouch technique and mitogen induced lymphocyte proliferation. (10 marks)
8. Enlist and discuss in brief the CPCSEA guidelines for animal handling. (10 marks)
9. **Write short notes:**
  - 9A. Drug targets and their applications in HTS
  - 9B. Central tendency(5 marks × 2 = 10 marks)
10. **Write briefly on the following:**
  - 10A. HTS instrumentation
  - 10B. Types of Randomization(5 marks × 2 = 10 marks)

