

MANIPAL UNIVERSITY

FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2015

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

Monday, May 18, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

☞ Answer ALL the questions

1. Enlist various factors affecting cultivation and detail out the extrinsic factors affecting cultivation with relevant examples
(10 marks)
2. Give a detailed account of special methods of extraction processes with suitable examples.
(10 marks)
3. What are Resins? Discuss their occurrence, chemistry, properties and methods of extraction.
(10 marks)
4. Define and classify pesticides. Give a detailed note on chemical pesticides.
(10 marks)
5. Describe the source, constituents and uses of any four phyto-constituents used in Urinary disorders
(10 marks)
6. Explain the biogenesis of aromatic amino acids leading to formation of alkaloids.
(10 marks)
7. Explain in detail the structural elucidation of Atropine
(10 marks)
8. What are cardiac glycosides? Describe their occurrence, chemistry, method of extraction and tests for identification
(10 marks)
9. Write short notes:
 - 9A. Marine anti-neoplastic agents
 - 9B. Role of Alkaloids in the chemotaxonomic classification(5+5 = 10 marks)
10. Write briefly on the following
 - 10A. Gene bank and Seed bank
 - 10B. Carotenoids and Vitamin A as antioxidants(5+5 = 10 marks)



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FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2015

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

(2014 REGULATION)

Wednesday, May 20, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

☞ **Answer ALL the questions**

1. Outline cGMP for the manufacture of liquid orals. (10 marks)
2. Discuss the development of dermatological formulations with their merits and demerits. (10 marks)
3. Explain the physical and chemical standardization of herbal extracts with an example. (10 marks)
4. Discuss briefly the different types of packaging and labeling of finished herbal products. (10 marks)
5. Give a detailed account of collection, drying and storage of herbal raw materials. (10 marks)
6. Discuss the role of various excipients used in herbal formulations. (10 marks)
7. Give the importance of spectroscopy in standardization of herbal extracts. (10 marks)
8. Describe the safety of herbals and herbal pharmacovigilence. (10 marks)
9. **Write Short Notes:**
 - 9A. Maceration and its types
 - 9B. Phytoequivalence and pharmaceutical equivalence (5 marks × 2 = 10 marks)
10. **Write briefly on the following**
 - 10A. Disintegration and dissolution test
 - 10B. Minerals and fibres in Nutraceuticals (5 marks × 2 = 10 marks)



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FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2015

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

Friday, May 22, 2015

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ **Answer ALL questions.**

1. Define embryogenesis and write the various types in detail. (10 marks)
2. Write a note on elicitors with special reference to classification and effects. (10 marks)
3. Give an account of screening methods and selection of high yielding cell lines. (10 marks)
4. Give an account of applications of PCR to plant genome analysis. (10 marks)
5. Discuss the nutritional requirements in plant tissue culture in detail. (10 marks)
6. Explain methods of micropropagation and give an account of its applications. (10 marks)
7. Write an essay on cryopreservation. (10 marks)
8. What is protoplast fusion and discuss on techniques adopted and give the applications of protoplast cultures. (10 marks)
9. **Write short notes:**
 - 9A. Give the applications of cellular totipotency.
 - 9B. Define plant tissue culture and discuss its applications. (5+5 = 10 marks)
10. **Write briefly on the following:**
 - 10A. Effect of immobilization on secondary metabolism
 - 10B. How hairy root cultures are established? Explain (5+5 = 10 marks)



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FIRST YEAR M. PHARM. DEGREE EXAMINATION – MAY 2015

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

Monday, May 25, 2014

Time: 10:00 – 13:00 Hrs.

Max. Marks: 100

✍ Answer ALL questions.

1. Draw a protocol to determine the LD₅₀ of a new drug by up and down method as per OECD guidelines.
(10 marks)
2. Explain the principles and procedures of different *in vitro* biological assays for evaluation of antioxidant activity (any three).
(10 marks)
3. Describe rat as a common laboratory animal in conducting various *in vivo* experiments.
(10 marks)
4. Discuss the methods of induction of epilepsy in laboratory animals and describe any one important *in vivo* animal model for antiepileptic drug screening.
(10 marks)
5. What are the different variability factors in biostatistics? Explain SD and SE and their relationship with a suitable example.
(10 marks)
6. Give a brief account of different phases of clinical trials and emphasise on the outcome of each phase.
(10 marks)
7. Define and classify anti-microbial drugs. Give a detailed account of disc diffusion and Kire-Bauer technique used for screening anti-microbial agents.
(10 marks)
8. What is blinding? Give the purpose and types of trials and add note Parallel design, Cross over design.
(10 marks)

9. **Write short notes:**

9A. Natural drug screening and its importance

9B. ABTS anti-oxidant assay

(5+5 = 10 marks)

10. **Write briefly on the following:**

10A. Screening large number of samples in a drug discovery program

10B. Chi Square test

(5+5 = 10 marks)

