

# Question Paper

Exam Date & Time: 29-Nov-2017 (02:00 PM - 05:00 PM)



**MANIPAL UNIVERSITY**

**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES  
END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017**

**PROGRAM: MPHARM SEMESTER 1**

**DATE: 29/11/2017**

**TIME: 2:00PM - 5:00PM**

**Advanced Pharmacology I [PHA-MPL102T]**

**Marks: 50**

**Duration: 180 mins.**

**Answer all the questions.**

**Answer the following (5 marks x 8 = 40 marks)**

**(5 marks)**

- 1) List the different superfamilies of receptors with examples. Explain the steps involved in the signal transduction through the receptors that are located intracellularly. (5)
- 2) Write a note on cytochrome P-450 enzymes. Explain their significance in biotransformation reactions. (5)
- 3) Write a note on GABA receptor-ion channel complex. List the different drugs that affect the receptor functions. (5)
- 4) Explain the pharmacological actions of propranolol. (5)
- 5) List the anti-parkinsonian drugs acting through modulation of central dopaminergic system. Explain the actions of dopamine precursor. (5)
- 6) Describe the mechanism of action of spironolactone and amiloride. (5)
- 7) Explain the synthesis of prostaglandins and list the drugs affecting the processes. (5)
- 8) With the help of a diagram explain the mechanisms of action of warfarin and heparin. (5)

**Answer the following with specific answers (2 marks x 5 = 10 marks)**

- 9) Even pure nitrous oxide cannot produce anaesthesia. Why? (2)
  - A)
  - B) Care should be taken while prescribing antibiotics to women taking oral contraceptives. Why? (2)
  - C) In patients who are on long term aspirin therapy, aspirin should be stopped one week before elective surgery. Why? (2)
  - D) Propranolol exacerbates asthma in susceptible individuals. Why? (2)
  - E) Alpha blockers are useful in benign hypertrophy of prostate. Explain. (2)

## on Paper

& Time: 01-Dec-2017 (02:00 PM - 05:00 PM)



### MANIPAL UNIVERSITY

**MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES**  
**END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017**  
**PROGRAM : MPHARM SEMESTER I**  
**DATE :01-12-2017**  
**TIME : 2:00PM - 5:00PM**

**Pharmacological and Toxicological Screening Methods I [PHA-MPL103T]**

**Marks: 50**

**Duration: 180 mins.**

**Answer the following (5 marks x 8 = 40 marks)**

- 1) Discuss the characteristic features of rat and rabbit as an experimental animals. (5)
- 2) Define bioassay and explain the principles of bioassays. Write a note on multiple point bioassay. (5)
- 3) Explain any two methods for screening anti-asthmatics. (5)
- 4) Discuss the in vivo methods to screen female antifertility agents. (5)
- 5) List the various models to induce Alzheimer's disease. With a neat diagram, explain the principle and procedure of Morris water maze test. (5)
- 6) Explain the principle and procedure of actophotometer and rotarod apparatus. (5)
- 7) List various animal models to screen anti-arrhythmic drugs. Write a short note on ouabain-induced arrhythmia. (5)
- 8) Explain the principle involved in cell viability assays to screen cytotoxic drugs. (5)

**Answer the following with specific answers (2 marks x 5 = 10 marks)**

- 9) What is interspecies difference? With an example explain this phenomenon. (2)
  - A) (2)
  - B) Mention advantages of ELISA over radio-immunoassays. (2)
  - C) How does difference in basal metabolic rate contribute to the difference in drug response during extrapolation of data from animals to humans? (2)
  - D) Explain the principle of 4R's related to animal experiments. (2)
  - E) In pre-clinical efficacy testing, optimum activity was observed at 30 mg/kg in rats. The average weight of rats was 200 g. Calculate the human equivalent dose for an average human weight of 60 kg. (2)

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ce & Time: 04-Dec-2017 (02:00 PM - 05:00 PM)



## MANIPAL UNIVERSITY

### MANIPAL COLLEGE OF PHARMACEUTICAL SCIENCES END SEMESTER THEORY EXAMINATIONS - NOVEMBER 2017 PROGRAM : MPHARM SEMESTER I

DATE : 04-12-2017

TIME : 2:00PM - 5:00PM

#### Cellular and Molecular Pharmacology [PHA-MPL104T]

Duration: 180 mins.

Marks: 50

Answer all the questions.

Answer the following (5 marks x 8 = 40 marks)

- 1) Explain the significance of siRNA and miRNA. (5)
- 2) Describe cryopreservation. Give its applications (5)
- 3) Discuss the principle underlying flow cytometry. Enumerate its uses (5)
- 4) Outline the basic equipment used for cell culture laboratory (5)
- 5) Explain the intrinsic pathway of apoptosis with diagram (5)
- 6) Describe the design and screening of plasmid as cloning vector (5)
- 7) Explain cell cycle with its check points (5)
- 8) Discuss the immunotherapeutic approaches to treat cancer (5)

Answer the following with specific answers (2 marks x 5 = 10 marks)

- 9) What advantage does the green fluorescent protein have over other antibodies? (2)
  - A) (2)
  - B) How is the synthesis of DNA strand occurring in 5' to 3' and vice-versa? (2)
  - C) How is p53 involved in inducing apoptosis? (2)
  - D) What is gene therapy? Give the criteria to select a delivery system for gene therapy (2)
  - E) Enlist the essential components of PCR. Mention its application (2)

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