

MANIPAL ACADEMY OF HIGHER EDUCATION

**SECOND SEMESTER M.Sc. MEDICAL (ANATOMY, PHYSIOLOGY, BIOCHEMISTRY,
PHARMACOLOGY, MICROBIOLOGY) / M.Sc. FORENSIC SCIENCE DEGREE
EXAMINATION – SEPTEMBER 2021**

**SUBJECT: MCC 602 - COMMON CORE: INTRODUCTION TO RESEARCH
MFS 602 - COMMON CORE-2: RESEARCH METHODOLOGY**

Monday, September 13, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. Explain in detail the components of the research article.

(10 marks)

2A. What is the concept of Confidence Interval? Calculate the 95% confidence interval of the mean of a sample of size 10 with mean 20 and standard deviation 5.

2B. The weight of 200 students are normally distributed with mean 50 kg and standard deviation 5 kg. What percentage of students will have weight above 60 kg?

(Given: Cumulative area under Normal Curve $Z=2$ is 0.9772)

(10 marks)

3. **Short Answer Questions:**

3A. Find the Standard Deviation of the respiratory rate/ minute found to be 16, 18, 19, 17, 21, 24, 22, 23, 25, 28 in ten individuals.

3B. What is Probability sampling? Explain Systematic Sampling with its advantages and disadvantages.

3C. What is one-way ANOVA? Discuss its application with example.

3D. What is Experimental study design? Discuss role of Randomization in Experimental design.

3E. Assume a Population of 1000 people, of whom 300 have a disease and 700 do not have the disease. A screening Test is used to identify the 300 people with disease. Result of the screening Test is given below. Calculate Sensitivity, Specificity, PPV and NPV and comment on performance of screening Test.

Results of Screening	True Characteristic in the Population	
	Disease	No Disease
Positive	180	100
Negative	120	600
Total	300	700

3F. What is the role of informed consent in medical research?

(5 marks × 6 = 30 marks)



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SECOND SEMESTER M.Sc. (MEDICAL PHARMACOLOGY) DEGREE
EXAMINATION – SEPTEMBER 2021

SUBJECT: MPH 604 - ANS, CVS & RENAL SYSTEM

Tuesday, September 14, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long Essays:

1. Classify beta blockers with suitable examples. Explain four indications of beta blockers with their rationale. Mention two differences between propranolol and atenolol.

(4+4+2 = 10 marks)

2. Explain the pharmacological basis of using nitrates in angina pectoris. Explain their adverse effects. Add a note on any two drug combinations used in angina pectoris with their basis.

(3+3+4 = 10 marks)

3. Answer the following:

3A. Therapeutic uses and adverse effects of digoxin.

3B. Actions of amiodarone on heart.

3C. Therapeutic uses of anticholinesterases.

3D. Adverse effects of thiazide diuretics.

3E. Mannitol.

3F. Mechanism of action and uses of succinylcholine.

(5 marks × 6 = 30 marks)



Reg. No.

MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER M.Sc. (MEDICAL PHARMACOLOGY) DEGREE EXAMINATION –
SEPTEMBER 2021

SUBJECT: CHEMOTHERAPY (MPH 606)

Wednesday, September 15, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

✍ Answer ALL the questions.

✍ Long Essays:

1. Classify semisynthetic penicillins. Explain their mechanism of action. Add a note on beta-lactamase inhibitors.

(4+3+3 = 10 marks)

2. Describe four patient-related and four drug-related factors that determine the choice of an antimicrobial agent. Define chemoprophylaxis with a suitable example.

(8+2 = 10 marks)

3. Write short notes on:

3A. Adverse effects of first-line antitubercular drugs

3B. Mechanism of action and adverse effects of amphotericin B

3C. Lamivudine

3D. General toxicity of anticancer drugs

3E. Mechanism of action and uses of metronidazole

3F. Compare and contrast: erythromycin and clarithromycin

(5 marks × 6 = 30 marks)

