

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)



MANIPAL ACADEMY OF HIGHER EDUCATION**SECOND SEMESTER M.Sc. (MEDICAL ANATOMY)
DEGREE EXAMINATION – SEPTEMBER 2021****SUBJECT: THORAX, ABDOMEN AND PELVIS - 1 (MAN 604)**

Tuesday, September 14, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

- ✍ All questions are compulsory. Write brief, clear, relevant and legible answers
- ✍ Illustrate your answers with diagrams and flow charts wherever appropriate.

1. Describe the spleen under the following headings:

- 1A. Location and external features
- 1B. Peritoneal and visceral relations.
- 1C. Applied aspects

(4+5+1 = 10 marks)

2. Discuss the right lung under following headings:

- 2A. Mediastinal surface
- 2B. Bronchopulmonary segments

(5+5 = 10 marks)

3. Write short notes on:

- 3A. Thoracic part of oesophagus
- 3B. Internal thoracic artery
- 3C. Venous drainage of heart
- 3D. Interior of the bladder
- 3E. Lesser Omentum
- 3F. Second part of duodenum

(5 marks × 6 = 30 marks)



MANIPAL ACADEMY OF HIGHER EDUCATION**SECOND SEMESTER M.Sc. (MEDICAL ANATOMY)****DEGREE EXAMINATION – SEPTEMBER 2021****SUBJECT: THORAX, ABDOMEN AND PELVIS - 2 (MAN 606)**

Wednesday, September 15, 2021

Time: 14:00 – 16:30 Hrs.

Maximum Marks: 50

- ✍ All questions are compulsory. Write brief, clear, relevant and legible answers.
- ✍ Illustrate your answers with diagrams and flow charts wherever appropriate.

1. Describe the embryological process of development of atrial septa of the heart and correlate it with the relevant applied aspects.

(10 marks)

2. Describe the microstructure of kidney in detail and discuss the ultrastructure of juxta-glomerular apparatus.

(7+3 = 10 marks)

3. Write short notes on:

3A. Microscopic anatomy of duodenum

3B. Meckel's diverticulum

3C. Paramesonephric duct

3D. Discuss the microstructure of papillae of the tongue

3E. Microstructure of uterus in proliferative phase

3F. Contrast X-rays of gastrointestinal tract

(5 marks × 6 = 30 marks)

