

Printing Pages: 2

Paper Code: MRM-301T

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(SVSU:2025-26/R)

Enrollment No.														
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Programme Name: M.Pharm

(Pharmaceutics/Pharmacology/Pharmaceutical Chemistry)

Semester: IIIrd/ IIInd Year Examination

Subject Name: Research Methodology & Biostatistics

Subject Code: MRM301T

Time: 180 Minutes

Max. Marks: 75

Before answering the question, candidate should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after the examination.

Instructions: All Sections are compulsory.

SECTION-A			
In section A attempt any five questions			(3*5=15)
S.No.	Questions	Marks	COs
Q1 (1)	Define the term Placebo.	3	1
Q1 (2)	What is the basic principle in medical research as per declaration of Helsinki?	3	3
Q1 (3)	What do you mean by sampling error?	3	2
Q1 (4)	Explain personal hygiene in animal care.	3	4
Q1 (5)	Develop the mathematical relationship between mean, median and mode.	3	2
Q1(6)	Compare correlation and regression analysis.	3	2
SECTION-B			
In section B attempt any five questions			(3*5=15)
Q2 (1)	Distinguish between Type-I and Type-II error in test of significance,	3	2
Q2 (2)	What do you mean by 'double effect'?	3	1
Q2 (3)	What do you mean by confidentiality in medical research?	3	3
Q2 (4)	Illustrate blinding techniques in research.	3	1
Q2 (5)	Construct a pie chart on the basis of percentage.	3	2
Q2(6)	Explain animal husbandry in brief.	3	4
SECTION-C			
In section C attempt any two questions			(7.5*2=15)
Q3 (1)	Illustrate the procedure of selecting a random sample.	7.5	2

Q3 (2)	Identify various conflicts between autonomy and beneficence/non-maleficence in medical research.	7.5	3
Q3 (3)	Discuss various ethical issues in Research.	7.5	6
SECTION-D			
In section D attempt any two questions		(7.5*2=15)	
Q4 (1)	Describe training of personnel engaged in laboratory animal care	7.5	4
Q4 (2)	Explain various strategies to eliminate errors or bias in research.	7.5	5
Q4 (3)	Explain randomization and crossover design in research methodology.	7.5	1
SECTION-E			
In section E attempt any one question		(15*1=15)	
Q5 (1)	Discuss the techniques of analysis of variance (ANOVA) for one way classification giving suitable examples. What are various applications of analysis of variance.	15	2
Q5 (2)	Explain in detail about WMA declaration of Helsinki on ethical principles for medical research involving human subjects.	15	3