

G. S. Mandal's  
 Maharashtra Institute of Technology, Aurangabad  
 (An Autonomous Institute )  
 END SEMESTER EXAMINATION  
First Year M.Tech (All) -April/May 2022

Course Code : MTM101

Course Name : Research Methodology &amp; IPR

Duration : 2 Hrs

Max. Marks : 50

Date : 5/04/2022

**Instructions :**

- i) All questions are compulsory
- ii) Assume suitable data wherever necessary and clearly state it
- iii) Figures to the right indicate full marks

Q. 1	Solve/Answer any five (Marks: 10)			
	Questions	Marks	CO	BL
a)	Define the meaning of Research. Also, list the different types of research.	2	CO1	1
b)	Identify the difference between probability and non-probability sampling.	2	CO1	1
c)	List the factors use in selection of method for data collection.	2	CO1	1
d)	What are the characteristics of hypothesis?	2	CO1	1
e)	What are the types of intellectual property rights?	2	CO1	1
f)	State the criteria of patentability?	2	CO1	1
Q. 2	Illustrate the procedure for Patent Registration in India.	8	CO4	3
Q. 3 a)	Discuss the scope of intellectual property rights.	4	CO2	2
Q. 3 b)	Analyze the reasons to promote and protect IPR.	4	CO5	4
Q. 4 a)	Discuss the steps in writing research report.	4	CO4	3
Q. 4 b)	Illustrate a general outline of technical report.	4	CO5	4
Q. 5	Explain the steps involved in research process.	8	CO3	2
	<b>OR</b>			
Q. 5	Explain the steps involved in hypothesis testing.	8	CO3	2

<b>Q. 6 a)</b>	For a distribution Karl Pearson's coefficient of skewness is 0.64, standard deviation is 13 and mean is 59.2 Calculate modes, median.	3	CO4	3
<b>Q. 6 b)</b>	b) Evaluate the importance of measures of Central Tendency and skewness in statistics.	5	CO6	5
<b>OR</b>				
<b>Q. 6 a)</b>	A population is divided into three strata so that $N_1 = 5000$ , $N_2 = 2000$ and $N_3 = 3000$ . Respective standard deviations are: $\sigma_1 = 15$ , $\sigma_2 = 18$ and $\sigma_3 = 5$ . How should a sample of size $n = 84$ be allocated to the three strata, if we want optimum allocation Using disproportionate sampling design?	3	CO4	3
<b>Q. 6 b)</b>	Research is much concerned with proper fact finding, analysis and evaluation." Do you agree with this statement? Justify the reasons in support of your answer.	5	CO6	5