INSTITUTE OF AERONAUTICAL ENGINEERING

(AUTONOMOUS)

Code No:BCS703

MODEL QUESTION PAPER - II

M.Tech II Semester Regular Examinations, August 2017 Research Methodologies

(CAD/CAM/ CSE/ ES/ SE/ PEED))

Time: 3 hours

Max. Marks: 70

Answer ONE Question from each Unit All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT-I

1.	(a)	What is research problem	? Define t	he main	n issues	s which	should	l receiv	ve the		
		attention of the research	er in fo	rmulati	ng the	resear	ch pro	blem.	Give		
		suitable examples.								[7M]	
	(b)	Discuss the format of thesis and dissertation.									
2.	(a)	What is time series? Explain various components of time series.									
	(b)	Fit a straight line traced by the method of least squares for the following									
		data.									
		Year	: 2005	2006	2007	2008	2009	20102	2011		
		Production (in 1000 of									
		tons):	77	88	94	85	91	98	100	[7M]	
			UNI	T-II							

(a)	What are the various types of graphs used for presenting a frequency											
	distribution.											[7M]
(b)	Explain the different ways of presenting the data.											
(a)	Describe the	steps in	sample	e desig	gn.							[7M]
(b)	A random sample of 200 measurements from an infinite population gave a mean value of 50 and a standard deviation of 9. Determine the 95%											
	confidence interval for the mean value of the population.											
				UN	IT-III							
(a)	Distinguish between correlation and regression.											[7M]
(b)	Ten students got the following percentage of marks in the course principles of Economics and											
	Statistics.											
	Roll No.	:1	2	3	4	5	6	7	8	9	10	
	Marks in											
	Economics:	78	36	98	25	75	82	90	62	65	39	
	Marks in											
	Statistics	: 84	51	91	60	68	62	86	58	53	47	
	Calculate the	e coeffic	ient of	Correl	ation.							
												[7M]
	 (a) (b) (a) (b) 	 (a) What are the distribution. (b) Explain the of a Describe the b A random sa mean value confidence in the confidence i	 (a) What are the various distribution. (b) Explain the different (a) Describe the steps in (b) A random sample of mean value of 50 confidence interval f (a) Distinguish between (b) Ten students got th principles of Econ Statistics. Roll No. : 1 Marks in Economics: 78 Marks in Statistics : 84 Calculate the coeffic 	 (a) What are the various types of distribution. (b) Explain the different ways of a Describe the steps in sample of 200 m mean value of 50 and a confidence interval for the near value of 50 an	 (a) What are the various types of grap distribution. (b) Explain the different ways of press (a) Describe the steps in sample desig (b) A random sample of 200 measure mean value of 50 and a standa confidence interval for the mean v (a) Distinguish between correlation at the following principles of Economics and Statistics. Roll No. : 1 2 3 Marks in Economics: 78 36 98 Marks in Statistics : 84 51 91 Calculate the coefficient of Correl 	 (a) What are the various types of graphs used distribution. (b) Explain the different ways of presenting (a) Describe the steps in sample design. (b) A random sample of 200 measurements mean value of 50 and a standard devo confidence interval for the mean value of 50 and a standard devo confidence interval for the mean value of UNIT-III (a) Distinguish between correlation and regards (b) Ten students got the following percent principles of Economics and Statistics. Roll No. : 1 2 3 4 Marks in Economics: 78 36 98 25 Marks in Statistics : 84 51 91 60 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for p distribution. (b) Explain the different ways of presenting the da (a) Describe the steps in sample design. (b) A random sample of 200 measurements from a mean value of 50 and a standard deviation confidence interval for the mean value of the p UNIT-III (a) Distinguish between correlation and regression (b) Ten students got the following percentage of principles of Economics and Statistics. Roll No. : 1 2 3 4 5 Marks in Economics: 78 36 98 25 75 Marks in Statistics : 84 51 91 60 68 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for present distribution. (b) Explain the different ways of presenting the data. (a) Describe the steps in sample design. (b) A random sample of 200 measurements from an infimean value of 50 and a standard deviation of 9. confidence interval for the mean value of the populat UNIT-III (a) Distinguish between correlation and regression. (b) Ten students got the following percentage of marks principles of Economics and Statistics. Roll No. : 1 2 3 4 5 6 Marks in Economics: 78 36 98 25 75 82 Marks in Statistics : 84 51 91 60 68 62 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for presenting a finite distribution. (b) Explain the different ways of presenting the data. (a) Describe the steps in sample design. (b) A random sample of 200 measurements from an infinite pormean value of 50 and a standard deviation of 9. Deternoring the determined of the population. (a) Distinguish between correlation and regression. (b) Ten students got the following percentage of marks in the principles of Economics and Statistics. (c) Roll No. : 1 2 3 4 5 6 7 Marks in Economics: 78 36 98 25 75 82 90 Marks in Statistics : 84 51 91 60 68 62 86 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for presenting a frequend distribution. (b) Explain the different ways of presenting the data. (a) Describe the steps in sample design. (b) A random sample of 200 measurements from an infinite population mean value of 50 and a standard deviation of 9. Determine confidence interval for the mean value of the population. UNIT-III (a) Distinguish between correlation and regression. (b) Ten students got the following percentage of marks in the cours principles of Economics and Statistics. Roll No. : 1 2 3 4 5 6 7 8 Marks in Economics: 78 36 98 25 75 82 90 62 Marks in Statistics : 84 51 91 60 68 62 86 58 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for presenting a frequency distribution. (b) Explain the different ways of presenting the data. (a) Describe the steps in sample design. (b) A random sample of 200 measurements from an infinite population gamean value of 50 and a standard deviation of 9. Determine the 9 confidence interval for the mean value of the population. UNIT-III (a) Distinguish between correlation and regression. (b) Ten students got the following percentage of marks in the course principles of Economics and Statistics. Roll No. : 1 2 3 4 5 6 7 8 9 Marks in Economics: 78 36 98 25 75 82 90 62 65 Marks in Statistics : 84 51 91 60 68 62 86 58 53 Calculate the coefficient of Correlation. 	 (a) What are the various types of graphs used for presenting a frequency distribution. (b) Explain the different ways of presenting the data. (a) Describe the steps in sample design. (b) A random sample of 200 measurements from an infinite population gave a mean value of 50 and a standard deviation of 9. Determine the 95% confidence interval for the mean value of the population. UNIT-III (a) Distinguish between correlation and regression. (b) Ten students got the following percentage of marks in the course principles of Economics and Statistics. Roll No. : 1 2 3 4 5 6 7 8 9 10 Marks in Economics: 78 36 98 25 75 82 90 62 65 39 Marks in Statistics : 84 51 91 60 68 62 86 58 53 47 Calculate the coefficient of Correlation.

6. (a) The following information is obtained concerning an investigation of 50 ordinary shops of small size.

	She	Total	
	In town	In villages	
Run by Men	17	18	35
Run by			
Women	3	12	15
Total	20	30	50

Can it be inferred that shops run by women are relatively more in villages than in towns? Use ψ^2 test (ψ^2 value for one degree of freedom at 5% level of significance is 3.84)

			[7M]
	(b)	Classification according class intervals involve three main problems :	
		1. How many classes should be there?	
		2. How to choose class limits?	
		3. How to determine class frequency?	
		State how these problems should tackled by researcher?	[7M]
		UNIT-IV	
7.	(a)	Explain interpretation is a fundamental component of Research Process? Explain	
		why so?	[7M]
	(b)	Describe the precautions that the researcher should take why interpreting is	
0	(a)	findings?	[/M]
8.	(a)	Explain the significance of a research report and narrate various steps involved in writing such a report?	[7M]
	(b)	Write the different types of report particularly pointing out the difference	[/101]
	(-)	between the technical report and a popular report?	[7M]
		UNIT-V	
9.	(a)	Explain new developments in the copyright protect for following	
		Computer games, video games, piracy of software.	[7M]
	(b)	Distinguish international trademark law and copy right law.	[7M]
10.	(a)	Describe the principles governing while a purchased book is later sold to	
			[7M]

[7M]

Explain the process patent application.

(b)