Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2019

Course: Research Methodology and Report Writing **Semester: II**

Course Code: DSRM2001

Programme: BBA (FT/LM/MM)

Time: 03 Hours **Max. Marks: 100**

Instructions:

SECTION A

Q.1.	**Point out the correct answer from the following:**	**Marks**	**CO**
a)	Studies show that listening to music while studying can improve your memory. To demonstrate this, a researcher obtains a sample of 36 college students and gives them a standard memory test while they listen to some background music. Under normal circumstances (without music), the mean score obtained was 25 and standard deviation is 6. The mean score for the sample after the experiment (i.e With music) is 28. What is the null hypothesis in this case? i) Listening to music while studying will not impact memory. ii) Listening to music while studying may worsen memory. iii) Listening to music while studying may improve memory. iv) Listening to music while studying will not improve memory but can make it worse.	**2**	**CO1**
b)	What would be the Type I error in the part (a) of question 1? i) Concluding that listening to music while studying improves memory, and it's right. ii) Concluding that listening to music while studying improves memory when it actually doesn't. **iii)** Concluding that listening to music while studying does not improve memory but it does.	**2**	**CO1**
c)	Hypothesis must have i) Applicability ii) Durability iii) Testability iv) Measurement	**2**	**CO2**

d)	Questionnaire is a : i) Research method ii) Measurement technique iii) Tool for data collection iv) Data analysis technique	**2**	**CO2**
e)	Research is i) Searching again and again ii) Finding solution to any problem iii) Working in a scientific way to search for truth of any problem iv) None of the above	**2**	**CO1**
f)	Which of the following is the first step in starting the research process? i) Searching sources of information to locate problem. ii) Survey of related literature iii) Identification of problem iv) Searching for solutions to the problem	**2**	**CO1**
g)	for testing of mean sample size 200 and population standard deviation is unknown we can use i) Chi square test ii) T test iii) Z test iv) F test	**2**	**CO2**
h)	For the use of a chi-square test, the data is required in the form of____. i) Discrete ii) Continuous iii) Frequency iv) None of the above	**2**	**CO2**
i)	Standard deviation can be negative. i) TRUE ii) FALSE	**2**	**CO1**
j)	A numerical value used as a summary measure for a sample, such as sample mean, is known as a i) population parameter ii) sample parameter iii) sample statistic iv) population mean v) None of the above answers is correct.	**2**	**CO1**

SECTION B			
	Answer all the following.	**Marks**	**CO**
3.	Explain chi square goodness of fit test.	**5**	**CO1,CO2**
4.	Explain null and alternative hypothesis with example.	**5**	**CO1,CO2**
5.	Explain any two from the following: i) Significance level ii) Power of the test iii) Critical region	**5**	**CO1,CO2**
6.	Explain criteria of good measurement scale .	**5**	**CO1,CO2**
SECTION-C			
	Answer all the following.	**Marks**	**CO**
Q.7	Q.An investigator wants to estimate the proportion of freshmen at his University who currently smoke cigarettes (i.e., the prevalence of smoking). How many freshmen should be involved in the study to ensure that a 95% confidence interval estimate of the proportion of freshmen who smoke is within 5% of the true proportion?	**6**	**CO1,CO2**
Q.8	Prepare a box plot and identify outlies for the following data set. 5,40,42,46,48,49,50,50,52,53,55,56,58,75,102	**6**	**CO3, CO4**
Q.9	A sample of 200 bulbs made by a company give a lifetime mean of 1540 hours with a standard deviation of 42 hours. Is it likely that the sample has been drawn from a population with a mean lifetime of 1500 hours? You may use 5% level of significance.	**6**	**CO3, CO4**
Q.10	Explain layout of the research report.	**6**	**CO3, CO4**
Q.11	Explain different steps of research design.	**6**	**CO2, CO3, CO4**
	SECTION-D		
	Answer all the questions	**Marks**	**CO**
Q.12	The manager of ABC ice-cream parlour has to take a decision regarding how much of each flavour of ice-cream he should stock so that the demands of the customers are satisfied. The ice-cream supplies claim that among the four most popular flavours, 62 percent customers prefer vanilla, 18 percent chocolate, 12 percent strawberry and 8 per cent mango. A random sample of 200 customers produces the results below. At the $\alpha=0.05$ significance level, test the claim that the percentages given by the supplies are correct.	**15**	**CO1, CO2, CO3, CO4**

	Flavour	vanilla	chocolate	Strawberry	Mango		
	No Preferring	120	40	18	22		
Q.13	. Two salesmen ,A and B are employed by a company. Recently, it has conducted a sample survey yielding the following data: Is there any significant difference between the average sales of the two salesmen?					**15**	**CO1, CO2, CO3, CO4**

	Salesman A	Salesman B
No of sell	20	22
Average sell	800	780
Standard deviation	70	60

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Instructions:

SECTION A

Q.1.	**Fill in the blanks:**	**Marks**	**CO**
a)	If the sample correlation coefficient between two variables is _____, the variables must be independent.	**1**	**CO1**
b)	For the use of a chi-square test, the data is required in the form of_____.	**1**	**CO1**
c)	For testing the value of the population mean, a_____test should be used when the sample size is small and the population standard deviations are known.	**1**	**CO1**
d)	Census data is an example of _____data source.	**1**	**CO1**
e)	The data that is always collected first in a research study is called _____ data.	**1**	**CO1**
Q.2	**State True or False and give reason.**		
a)	Research is a tool that is specific to certain disciplines.	**1**	**CO1**
b)	The research process is a precise and essentially a sequential process.	**1**	**CO1**
c)	The group of individuals from whom one needs to collect data for the study is called sample.	**1**	**CO1**
d)	Changes in the research orientation will cause changes in the research design selection as well.	**1**	**CO1**
e)	One of most important features of a good research study is replicability of findings.	**1**	**CO1**
	Point out the correct answer from the following:		
a)	Studies show that listening to music while studying can improve your memory. To demonstrate this, a researcher obtains a sample of 36 college students and gives them a standard memory test while they listen to some background music. Under normal circumstances (without music), the mean score obtained was 25 and standard deviation is 6. The mean score for the sample after the experiment (i.e With music) is 28. What is the null hypothesis in this case?	**2**	**CO1**

	i) Listening to music while studying will not impact memory. ii) Listening to music while studying may worsen memory. iii) Listening to music while studying may improve memory. Listening to music while studying will not improve memory but can make it worse.		
b)	What would be the Type I error in the part (a) of question 1? i) Concluding that listening to music while studying improves memory, and it's right. ii) Concluding that listening to music while studying improves memory when it actually doesn't. Concluding that listening to music while studying does not improve memory but it does.	**2**	**CO1**
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e)	For the use of a chi-square test, the data is required in the form of____. i) Discrete ii) Continuous iii) Frequency iv) None of the above	**2**	**CO1**
	Section B		
	Attempt all the questions		
Q.4	Distinguish between independent, dependent and extraneous variable.	**5**	**CO1,CO2**
Q.5	Distinguish between exploratory and descriptive research designs.	**5**	**CO2,CO3**
Q.6	Describe the different types of scales with example. Also explain Likert-type scale.	**5**	**CO2,CO3**
Q.7	Explain the criteria of good research	**5**	**CO2,CO3**
	Section C		

<table>
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