Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: MBA (AM/PSM/GM) **Semester: II**
Subject: Business Research Methods **Subject code- DSRM7002**
Max. Marks: 100 **Time: 03 hrs.**
Instructions:

SECTION A

S. No.	**Attempt all of the following, each question carry two marks.**		
Q 1	Central limit theorem	**2**	**CO 1**
Q 2	Null Hypothesis with suitable example	**2**	**CO 1**
Q 3	Systematic sampling	**2**	**CO 1**
Q 4	Type II error	**2**	**CO 1**
Q 5	Std. error	**2**	**CO 1**
Q 6	Airline A and Airline B boast successful baggage routing rates of 95 percent and 99 percent, respectively. From this information we can determine: a) Airline A has better baggage service b) Airline B has better baggage service c) The baggage services are equally accurate d) Nothing: we need more information	**2**	**CO 1**
Q 7	ANOVA	**2**	**CO 1**
Q 8	Parametric Test	**2**	**CO 1**
Q 9	Power of test	**2**	**CO 1**
Q 10	Snow ball sampling	**2**	**CO 1**

SECTION B
Attempt any Four

Q 1	How qualitative research is different from quantitative research.	**5**	**CO2**
Q 2	Describe, in brief, the layout of a research report, covering all relevant points.	**5**	**CO2**
Q 3	What is hypothesis testing process? Discuss the steps involved in hypothesis testing process.	**5**	**CO2**
Q 4	According to the U.S. Bureau of Labor Statistics, the average weekly earnings of a production worker in 1997 were $424.20. Suppose a labor researcher wants to test to determine whether this figure is still accurate today. The researcher randomly selects 54 production workers from across the United States and obtains a representative earnings statement for one week from each. The resulting sample average is $432.69. Assuming a population standard deviation of $33.90, and a 5% level of significance, determine whether the mean weekly earnings of a production worker have changed. (Given Z tabulated value at 0.05 significance level is 1.96)	**5**	**CO3**

<table>
<tr><td>Q 5</td><td>Discuss the properties of good estimator.</td><td>5</td><td>CO2</td></tr>
<tr><td colspan="4">SECTION-C
Attempt any three</td></tr>
<tr><td>Q 1</td><td>Two independent samples were collected. For the first of 42 items, the mean was 32.3 and the variance 9. The second sample of 57 items had a mean of 34 and a variance of 16.

(a) Compute the estimated std. error of the difference between the two means.
(b) Using α = 0.05, test whether there is sufficient evidence to show that second population Has a larger mean. (Given that Z = 1.96)</td><td>10</td><td>CO3</td></tr>
<tr><td>Q 2</td><td>A business researcher wants to determine whether type of gasoline preferred is independent of a person’s income. She takes a random survey of gasoline purchasers, asking them one question about gasoline preference and a second question about income. The respondent is to check whether he or she prefers (1) regular gasoline, (2) premium gasoline, or (3) extra premium gasoline. The respondent also is to check his or her income brackets as being (1) less than $30,000, (2) $30,000 to $49,999, (3) $50,000 to $99,999, or (4) more than $100,000. The business researcher tallies the responses and obtains the results in Table given below. Using α = .01, she can use the chi-square test of independence to determine whether type of gasoline preferred is independent of income level (Given that tabulated value of chi square is 16.8119)

<table>
<tr><td rowspan="2">Income</td><td colspan="4">Type of Gasoline</td></tr>
<tr><td></td><td>Regular</td><td>Premium</td><td>Extra Premium</td></tr>
<tr><td></td><td>Less than $30,000</td><td>85</td><td>16</td><td>6</td></tr>
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<tr><td>Q 3</td><td>Give your understanding of a good research design. Discuss the components of research design. Is single research design suitable in all research studies? If not why.</td><td>10</td><td>CO2</td></tr>
<tr><td>Q 4</td><td>One group of researchers set out to determine whether there is a difference between “average Americans” and those who are “phone survey respondents.” Their study was based on a well-known personality survey that attempted to assess the personality profile of both average Americans and phone survey respondents. Suppose they sampled nine phone survey respondents and 10 average Americans in this survey and obtained the results on one personality factor, conscientiousness, which are displayed in Table below. Assume that conscientiousness scores are normally distributed in the population. (Given that t at 0.005, d.f. 17 = 2.898.)

<table>
<tr><th>Phone Survey Respondents</th><th>Average Americans</th></tr>
<tr><td>35.38</td><td>35.03</td></tr>
<tr><td>37.06</td><td>33.90</td></tr>
<tr><td>37.74</td><td>34.56</td></tr>
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		36.97	36.24			
		37.84	34.59			
		37.50	34.95			
		40.75	33.30			
		35.31	34.73			
		35.30	34.79			
			37.83			

SECTION-D (Case study/Analytical)

Q 1

A study compared the effects of four 1-month point-of-purchase promotions on sales. The unit sales for five stores using all four promotions in different months follow.

Free samples	78	87	81	89	85
One-pack gift	94	91	87	90	88
Rupees off	73	78	69	83	76
Refund by mail	79	83	78	69	81

Q 1	Compute the mean unit sales for each promotion and then determine the grand mean.	**7.5**	**CO4**
Q 2	Estimate the population variance using the between –column variance.	**7.5**	**CO4**
Q 3	Estimate the population variance using the within-column variance computed from the variance within the samples.	**7.5**	**CO4**
Q 4	Calculate the F-ratio. At the 0.01 level of significance, do the promotions produce different effects on the sales? What will be your advice to the management related to promotions effects. (F Tabulated value at 0.01 level with 3 dof in the numerator and 16 dof in the denominator is **5.29**)	**7.5**	**CO4**

Name: **Enrolment No:**	UPES

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Q 2	Alternative Hypothesis with suitable example	**2**	**CO 1**
Q 3	Stratified sampling	**2**	**CO 1**
Q 4	Type I error	**2**	**CO 1**
Q 5	Std. error	**2**	**CO 1**
Q 6	Central limit theorem	**2**	**CO 1**
Q 7	ANOVA	**2**	**CO 1**
Q 8	Non-parametric Test	**2**	**CO 1**
Q 9	Power of test	**2**	**CO 1**
Q 10	Snow ball sampling	**2**	**CO 1**

SECTION B
Attempt any Four

Q 1	How causal research is different from explorative research.	**5**	**CO2**
Q 2	Describe, in brief, the layout of a research report, covering all relevant points.	**5**	**CO2**
Q 3	What is hypothesis testing process? Discuss the steps involved in hypothesis testing process.	**5**	**CO2**
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