Program/course: MBA (OG)   Semester – II
Subject: Business Research Methods   Max. Marks : 100
Code   :MBCQ 732   Duration: 3 Hrs
No. of page/s:3

Note: Answer your questions to the points using keywords, flow diagram or bullet points. Try to maintain the sequence while answering.

Section – A

10*2=20)

1. Explain the following in brief---
   a) Semantic differential scale
   b) Components of Report writing
   c) Double- barreled question
   d) What is the purpose of an appendix and an 'Executive Summary' in a written report?
   e) Degree of freedom for t-testing and chi-square testing
   f) Which statistical tools do we use to measure the degree of association and to fit line?
   g) Discriminate the different test statistic in hypothesis testing
   h) What is coding and decoding of data?
   i) Numerical and categorical data
   j) Cluster verses stratified sampling

Section – B

Answer all questions.   (3*10= 30)

2. A company has organized its sales department. The following data show its weekly sales both before and after reorganization. The period for comparison is taken from January to March in two successive years:

	Week									
	1	2	3	4	5	6	7	8	9	10
Sales prior to reorganization (Rs lakh)	12	15	13	11	17	15	10	11	18	19
Sales after reorganization (Rs lakh)	16	17	14	13	15	14	12	11	17	22

Can it be concluded that the reorganization of the sales department of the company has resulted in a significant increase in its sales?

3. An insurance agent has claimed that the average age of policyholders who insure through him is less than the average for all agents, which is 35 years. A random sample of 40 policyholders who have insured through him gave an average of 32 years with a standard deviation of 2 years. Using α at 5%, ascertain whether the insurance agent's claim is justifiable.

4. Explain the problems encountered by researchers in India

<center>Section – C</center>

Attempt any two questions.   Marks: 2X15=30

5. ATMs must be stocked with enough cash to satisfy customers making withdrawals over an entire weekend. On the other hand, If too much cash is unnecessarily kept in the ATMs, the bank is forgoing the opportunity of investing the money and earning interest. Suppose that at a particular branch, the expected (population) average amount of money withdrawn from ATMs per customer transaction over the weekend Rs 15000 with an expected (population) standard deviation of Rs. 1500.
(a) State the null and alternate hypothesis.
(b) If a random sample of 36 customer transactions is examined and it is observed that the sample mean withdrawal is Rs. 16,500, is there evidence to believe that the true average withdrawal is no longer Rs. 15000(use a 5%=.05 level of significance)
(c) What will your answer be in (b) if the standard deviation is really Rs. 1000
(d) What will your answer be in (b) if you (use a 1% level of significance)
(e) If a random sample of 26 customer transactions is examined and it is observed that the sample mean withdrawal is Rs. 16,500, is there evidence to believe that the true average withdrawal is no longer Rs. 15000(use a 5% LOS)

6. A potential buyer wants to decide which of two brands of electric bulbs he should buy as he has to buy them in bulk. As a specimen, he buys 100 bulbs of each of the two brands---A and B. On using these bulbs, he finds that brand A has a mean life of 1000 hrs with a standard deviation of 30 and brand b has a mean life of 1050 hrs with a standard deviation of 50 hrs. Do the brand differ significantly in quality?

7. A company has two factories—one located in Delhi and another in Mumbai. It is interested to know whether its employees are satisfied with their jobs or not at both the places. To get proper and reliable information, it has undertaken a survey through questionnaire at both the factories, and the data obtained in form of observed frequency are shown as follows:

	Number of employees by degree of satisfaction		
	Delhi	Mumbai	total
Fully satisfied	50	70	120
Moderately satisfied	90	110	200
Moderately dissatisfied	160	130	290
Fully dissatisfied	200	190	390
Total	500	500	1000

Make the decision, whether the distribution of job satisfaction for employees in Delhi and Mumbai is homogeneous.

8. "The factors influencing the price of oil and its likely evolution over the next quarter century". While investigating the fundamental factors, which shape the long-term oil price developments, highlight the importance of growth-led demand for oil and the increasingly geographically concentrated oil reserves. Despite the growing importance of alternative fuels and the more efficient use of oil in production, fossil fuels are still likely to provide almost 90 % of primary energy needs until 2030, with oil imports making up almost two-fifths of that. Targeting all the demand and supply scope of future fuel as crude oil, the CEO of one company whose refinery is configured to refine almost all types of crude oil wanted to do a research. He identified 5 factors influencing the variation in crude oil price where crude oil price is considered to be dependent variable and the factor effecting the price is considered as an independent variable. Out of all these 5 factors he has chosen two major factors i.e. different geographic locations and the demand in different years to see its effect on crude oil prices for India. To verify whether which factor is really making the effect on crude oil pricing the following data(crude oil price is $/bbl) from BP has been taken and given below in the following table:

		price due to Geographic location			
		Dubai	Brent	Nigerian	WTI
price due to demand in different years	2007	22.81	24.44	24.23	25.93
	2008	23.74	25.02	25.04	26.16
	2009	26.78	28.83	28.66	31.07
	2010	33.64	38.27	38.13	41.49
	2011	49.35	54.52	55.69	56.59
	2012	61.50	65.14	67.07	66.02
	2013	68.19	72.39	74.48	72.20
	2014	94.34	97.26	101.43	100.06
	2015	61.39	61.67	63.35	61.92
	2016	78.06	79.50	81.05	79.45

Answer the following Questions:
a) Create null and alternative hypothesis for different factors.
b) Find the suitable test statistics and do the required calculation.
c) Hypothesis is rejected or accepted? Give reason.
d) Comment on the case considering research methodology. Also explain further scope(need) of research
e) Identify any other factors, which influence the price of crude.
f) Compile the whole study in form of research report.