Presidency University, Bengaluru
School of Management

II Semester 2015-2016   Test 1   **Course: MBA A 110 Business Research Methods and Quantitative Techniques** (Closed Book)

Max Marks: 30   Max Time: 50 Min   Weightage: 15 %   14 Mar 2016   **Set A**

Q 1. Fill in the blanks   **(5Q x 1M=5M)**

A. …………….. and ………………… are the two types of statistics.

B. The primary levels of scale of measurements are ……………………, ……………, …………and ………………

C. EDA stands for …………………………………………; SPSS stands for…………………………………………

D. The sum of the relative frequencies will always equal to ………………

E. The sum of deviations taken from arithmetic mean is ………………

Q 2. Briefly answer the following   **(3Q x 5M = 15M)**

1. A company wants to pay daily bonus to its employees. The bonus is to be paid as under:

Daily salary (Rs):	100-200	200-300	300-400	400-500	500-600	600-700
Daily Bonus (Rs):	10	20	30	40	50	60

Actual daily salaries of the employees in rupees are as under:

175, 225, 375, 478, 525, 650, 570, 451, 382, 280,

375, 465, 530, 480, 320, 515, 225, 345, 471, 450

Find out the total daily bonus and average bonus paid to the employees.

2. The following is the frequency distribution of the number of telephone calls received in 245 successive one minute intervals at an exchange:

No. of calls:	0	1	2	3	4	5	6	7
Frequency:	14	21	25	43	51	40	39	12

Calculate mean and mode.

3. The following table gives the marks obtained by 10 students in a class

Roll No.	1	2	3	4	5	6	7	8	9	10
Marks :	40	50	30	60	70	80	40	50	60	90

Calculate Mean

Q 3. During the 10 weeks of a session the marks scored by two candidates, Jayanth and Vasanth taking the computer programme course are given below:

     (10 Marks)

Jayanth:	58	59	60	54	65	66	52	75	69	52
Vasanth:	87	89	78	71	73	84	65	66	56	46

a. Who is a better scorer – Jayanth or vasanth ?
b. Who is more consistent

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Business Research Methods and Quantitative Techniques

Course : MBA A110   (Closed book)

II semester 2015-16   Test 2   Date: 18th April 2016

Max. marks : 50   Max. Time: 50 minutes   Weightage : 25%

Part – A   (5QX2M= 10M)

1. If Karl Pearson's coefficient of skewness is -0.32, standard deviation = 6.5 and mean = 28.7, find mode.
2. The correlation coefficient lies between ….. and ……..
3. The spearman's rank correlation is 0.8, ΣD^2= 33. Find the number of items.
4. If regression coefficient between X and Y is -0.4 and regression coefficient between Y and X is   -0.9, find the correlation coefficient.
5. If two events cannot happen simultaneously, the events are said to be …………………..

Part B   (3Q X 6M=18M)

1. Calculate Karl Pearson's coefficient of correlation between income and expenditure and comment

Income	:	46	54	56	56	58	60	62
Expenditure	:	36	40	44	54	52	58	54

2. Fit a straight line trend by method of least squares

Year	: 1971	1972	1973	1974	1975	1976	1977
Sale	: 40	45	46	42	47	50	46

3. Out of every 1000 investors 20 complain non receipt of share certificates and 18 have their names wrongly spelled. Of these 5 have both these complaints. What is the probability of any randomly chosen investor has any complaint?

Part C

1. A survey was conducted to study the relationship between expenditure on accommodation (X) and expenditure on food and entertainment (Y) and the following results were obtained:

	Mean	SD
Exp. On accommodation	173	63.15
Exp on food and entertainment	47.8	22.98
Correlation coefficient	0.57	

Write down the equation of regression x on Y and estimate the expenditure on food and entertainment if the expenses on accommodation is Rs. 200.

2. The following data were collected on the height (inches) and weight (pounds) of women swimmers.

Height : 68   64   62   65   66

Weight : 132   108   102   115   128

   a.   Develop a scatter diagram for these data with height as the independent variable

   b.   What does the scatter diagram developed in part (a) indicate about the relationship between the two variables ?

   c.   Develop the estimate regression equation by computing the value slope and intercept.

   d.   If a swimmer's height is 63 inches, what would you estimate her weight to be?

Business Research Methods and Quantitative Techniques

Course :MBA A 110   II Semester 2015-2016   (Closed Book) 30th May 2016

Max. Marks: 80   Max. Time: 3 Hours   Weightage: 40%

Part – A   (10QX2M= 20M)

1. Define the term " statistics"
2. The mean height of 25 male workers in a factory is 61 cm. And the mean height of 35 female workers in a factory is 58cm. Find the combined mean height of 60 workers in a factory.
3. Sum of quartiles = 78.2; difference of quartiles 14, median = 35 ; find Bowley's coefficient of skewness (0.476)
4. Let A be the event that a student is enrolled in an accounting course and let S be the event that a student is enrolled in a statistics course. It is known that 30% of all students are enrolled in an accounting course and 40% of all students are enrolled in statistics. Included in these numbers are 15% who are enrolled in both statistics and accounting. Find P(S).   0.4
5. If x is a binomial random variable with n=10 and p=0.4, find the mean and variance of x.
6. Define standard Normal variate
7. Define standard error
8. Mention any four types of research
9. Write down the steps involved in testing of hypothesis
10. Differentiate between Type I and Type II error.

Part B   (6Q X 5M=30M)

1. Represent the following information using suitable diagram

Item	Expenditure
Cement	20%
Steel	18%
Bricks	10%
Timber	15%
Labour	25%
Misc	12%

2. Average rainfall of a city from Monday to Saturday is 0.3 Inch. Due to heavy rainfall on Sunday the average rainfall of the week increased to 0.5 Inch. What was the rainfall on Sunday ?

3. Two housewives, Geeta & Rita asked to express their preference for different kinds of detergents gave the following inputs.

Detergents :	A	B	C	D	E	F	G	H	I	J
Geeta :	4	2	1	3	7	8	6	5	9	10
Rita :	4	1	2	3	8	7	5	6	9	10

Calculate Spearman's Rank correlation and comment.

4. In a survey, 60% of all the staffs in one company "like their jobs very much." Suppose 5 randomly selected staffs from that company are to be asked whether they like their job very much. Find the probability that 2 people don't like their jobs very much.

5. In order to determine whether or not a particular medication was effective in curing the common cold, one group of patients was given the medication, while another group received sugar pills. The results of the study are shown below. Determine whether or not the medication was effective in curing the common cold. Use chi square distribution with 5% level of significance. (Chi square table value with 1 df at 5% level of significance is 3.841)

	Patients Cured	Patients Not Cured
Received medication	70	10
Received sugar pills	20	50

6. Write down the steps involved in business research.

Part C   **(3QX 10M=30M)**

1. The following data were collected on the height (inches) and weight (pounds) of women swimmers.

   Height : 68   64   62   65   66
   Weight : 132   108   102   115   128

   a. Develop a scatter diagram for these data with height as the independent variable
   b. What does the scatter diagram developed in part (a) indicate about the relationship between the two variables ?
   c. Develop the estimate regression equation by computing the value slope and intercept.
   d. If a swimmer's height is 63 inches, what would you estimate her weight to be?

2. A small southern West Australian country town has maintained records showing that the daily *maximum* temperature during summer (Dec.,Jan.,Feb.) has averaged 30 degree Celsius with a standard deviation of 5 degree Celsius. • Further, the *maximum* temperature appears to be approximately **normally distributed.**

Find:
(a) the **percentage** of summer days that will have a *maximum* temperature **between 30C & 35C.**
(b) the **percentage** of days that the *maximum* temperature will **exceed 37.5 C**
(c) the probability that the maximum temperature will be **less than 24 C.**
(d) the proportion of summer **days** that the maximum temperature will be **between 18C and 20C**
(e) The *maximum* temperature that will be exceeded only 5% of the time.

3. Choose a research topic of your interest, define the research problem and draft a blank questionnaire with a minimum of 10 questions.