SET A

MASTER OF COMMERCE
SECOND SEMESTER
BUSINESS STATISTICS
MCM – 205
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1.30 hrs. **Full Marks: 35**

Objective

Time: 15 mins. **Marks: 10**

Choose the correct answer from the following: ***1×10=10***

1. .....is used in labeling the variable.
   a. Nominal scale
   b. Ordinal scale
   c. Ratio scale
   d. Interval scale

2. Cluster sampling is a.....
   a. Probability sampling
   b. Non-probability sampling
   c. Mixed sampling
   d. None of the above

3. The correlation between 'price' and 'height' is an example of.....
   a. Positive correlation
   b. Negative correlation
   c. Zero correlation
   d. None of the above

4. If the product of two regression coefficients is 1, then the two regression lines are.....
   a. Parallel to each other
   b. Identical
   c. Perpendicular to each other
   d. None of the above

5. Which of the following method is free from subjective error?
   a. Least square method
   b. Moving average method
   c. Semi-average method
   d. None

6. .....associated with Economic time series.
   a. Secular trend
   b. Cyclic variation
   c. Seasonal variation
   d. Random variation

7. The null hypothesis states that.....
   a. There is no significant difference between the true and hypothetical values of a parameter
   b. There is significant difference between the true and hypothetical values of a parameter
   c. True value of a parameter is greater than its hypothetical value.
   d. True value of a parameter is less than its hypothetical value.

8. Type-I error is.....
   a. Accepting Null hypothesis when it is true
   b. Accepting Null hypothesis when it is not true
   c. Rejecting Null hypothesis when it is true
   d. Rejecting Null hypothesis when it is not true

9. Degrees of freedom is not associated with.....
   a. Students' t-test
   b. Z-test
   c. Chi-square (χ^2) test
   d. F-test

10. The statistic.....is used in ANOVA.
   a. Z-test
   b. Students t-test
   c. Chi-square (χ^2) test
   d. F-test

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Descriptive

Time : 1 Hr. 15 Mins. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. Describe the different types of sampling techniques used in Research. 5

2. The heights of fathers and their sons are given in the following table. 10
   Heights of father (in inches) : 60656663676970
   Heights of sons (in inches) : 65646662696869
   Predict the height of a son when his father's height is 68 inches.

3. Production in a sugar mill is given below. Fit a linear trend by the method of least squares and estimate the production for the year 2016 10

Year	2008	2009	2010	2011	2012	2013	2014
Production: ('000) Thousand quintals	40	45	46	42	47	49	46

4. A machine is designed to produce insulating washers for electrical devices of average thickness of 0.025 cm. A random sample of 10 washers was found to have an average thickness of 0.024 cm with a S.D. of 0.002 cm. Test the significance of the deviation. 10
   [The critical value of the test statistic at 5% level of significance for 9 and 10 degrees of freedom are respectively 2.262 and 2.228]

5. To test the efficiency of a new drug, a controlled experiment was conducted wherein 300 patients were administered the new drug and 200 other patients were not given the drug. The patients were monitored and results were obtained as follows: 10

	Cured	Condition worsened	No effect
Given the drug	200	40	60
Not given the drug	120	30	50

[Given, $\chi^2_{0.05}$ = 3.84 5.99 7.8
d.f. = 1 2 3]

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