Name : ....

Roll No. : ....

Invigilator's Signature : ....

2012

MARKET RESEARCH TECHNIQUES

Time Allotted : 3 Hours   *Full Marks* : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words

as far as practicable.

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

$$10 \times 1 = 10$$

i) The correlation coefficient between two independent variables is

  a)   0   b)   + 1

  c)   0·5   d)   – 1.

ii) Which of the following values of correlation coefficient is likely to be correct, if the correlation is quite high ?

  a)   0·6   b)   – 0·8

  c)   + 0·7   d)   0·5.

30384(MMA)   [Turn over

iii) In a study involving two variables, the product of the two regression coefficients is found to be equal to 1. This implies that

 a) $r = 0$ b) $r = +1$

 c) $r = -1$ d) $r = \pm 1$.

iv) If $x \sim N(0,1)$, then $P(x > 0)$ is

 a) $\dfrac{1}{2}$ b) 0

 c) $\dfrac{1}{4}$ d) none of these.

v) Which of the following statements is not true ?

 a) Range of normal distribution is from $-\infty$ to $+\infty$

 b) Range of t distribution is from 0 to $+\infty$

 c) Range of F distribution is from 0 to $+\infty$

 d) Range of chi-square distribution is from 0 to $+\infty$.

vi) Which of the following properties is not a desirable property of a point estimator ?

 a) Consistency b) Efficiency

 c) Sufficiency d) Bias.

vii) Type-I error is defined as the probability to

 a) accept a hypothesis when it is true

 b) accept a hypothesis when it is false

 c) reject a hypothesis when it is true

 d) reject a hypothesis when it is false.

viii) Which of the following statements is normally true ?

    a) Acceptance region is more than the critical region

    b) Acceptance region is less than the critical region

    c) Acceptance region is equal to the critical region

    d) There is no relationship between acceptance and critical region.

ix) Which one of the following statements is false ?

    a) α is called Type-I error

    b) $1 - \alpha$ is called power of the test

    c) β is called Type-II error

    d) $1 - \beta$ is called power of the test.

x) In Discriminant Analysis the dependent variable is a

    a) random variable   b) normal variable

    c) categorical variable   d) none of these.

xi) Dendrogram is obtained in

    a) Conjoint analysis   b) Cluster analysis

    c) Factor analysis   d) Discriminant analysis.

xii) Factor analysis can be applied in case of

    a) only primary data

    b) only secondary data

    c) both primary and secondary data

    d) none of these.

xiii) Quantitative survey research methods

    a)   are used to make accurate predictions about relationship between market factors and consumer behaviors

    b)   aid in understanding those relationships and differences

    c)   focus on standardized raw data useful in researching the how, what, where, who and when aspects of market factors and conditions

    d)   all of these.

xiv) .... analysis is the appropriate statistical technique for testing the hypothesis that the group means of a set of independent variables for two or more groups are equal.

    a)   Factor   b)   Cluster

    c)   Discriminant   d)   Conjoint.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2.   What is the use of conjoint analysis in brand selection ?

3.   Explain briefly the implication of discriminant analysis with examples.

4.   A simple random sample of size 5 is drawn without replacement from a finite population consisting of 41 units. If the population standard deviation is 6·25, what is the standard error of sample mean ? (use finite population correction).

5. Differentiate between cross-sectional & longitudinal studies.

6. Write a note on Student's t distribution.

7. Discuss the basic concept of dendogram.

GROUP – C
(Long Answer Type Questions)
Answer any *three* of the following. $3 \times 15 = 45$

8. a) In the following table are recorded data showing the test sources made by 10 salesmen on an intelligence test and their weekly sales :

Salesmen	1	2	3	4	5	6	7	8	9	10
Test scores	50	70	50	60	80	50	90	50	60	60
Sales ('000 Rs.)	25	60	45	50	45	20	55	30	45	30

Calculate the rank correlation coefficient between intelligence and efficiency in salesmanship.

b) The following results were obtained from records of age (x) and systolic blood pressure (y) of a group of 10 women :

|	x	y
Mean	53	142
Variance	130	165

$\sum (x - \bar{x})(y - \bar{y}) = 1220$

Find the appropriate regression equation and use it to estimate the blood pressure of a woman whose age is 45. $9 + 6$

9. a) What is the relation between chi-square distribution and F distribution ?

b) How do you distinguish between 'standard error' and 'standard deviation' ?

c) Discuss the advantages of sampling method over census method of collection of statistical information.

d) The safety limit of a crane is known to be 32 tons. The mean weight and the standard deviation of a large number of iron rods are 0·3 ton and 0·2 ton respectively. 100 rods are lifted at a time. Find the probability of an accident. 2 + 3 + 4 + 6

10. a) Distinguish between Point Estimation and Interval Estimation.

b) Distinguish between Confidence Interval and Confidence Limits.

c) What are the criteria for a good estimator ?

d) A sample of 600 screws is taken from a large consignment and 75 are found to be defective. Estimate the percentage of defectives in the consignment and assign limits within which the percentage lies.

3 + 3 + 4 + 5

11. a) Explain One-tailed and Two-tailed tests.

b) What are Type-I and Type-II Errors ?

c) A manufacturer claimed that at least 90% of the components which he supplied, conformed to specifications. A random sample of 200 components showed that only 164 were up to the standard. Test his claim at 1% level of significance.

d) When do you use the t test ? 4 + 3 + 6 + 2
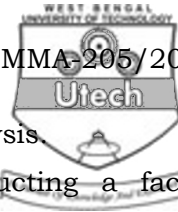
12. a) Explain the basic concept of factor analysis.

    b) Discuss the steps involved in conducting a factor analysis.

    c) In factor analysis what is Bartlett's test of sphericity ?

    d) In factor analysis what guideline do you use to determine the number of factors to extract ?

    $$4 + 5 + 4 + 2$$

13. In terms of the basic dependence model how can a market researcher express conjoint analysis ?

    Using Conjoint Analysis solve the Golf Ball Case in market research.

    Golfer 1

Ball life			
Distance	54	36	18
275	1	2	4
250	3	5	7
225	6	8	9

    Golfer 2

Ball life			
Distance	54	36	18
275	1	3	6
250	2	5	8
225	4	7	9

    $$3 + 12$$

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