

PARUL UNIVERSITY
FACULTY OF ARTS
M.A. Summer 2018 – 19 Examination

Semester:4

Subject Code:15203254

Subject Name: Experimental Design and Quantitative Analysis

Date:15/04/2019

Time:10:30AM TO 01:00PM

Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Do as directed.

(08)

A. Multiple choice type questions. (Each of 0.5 mark)

1. Using this technique, we try to partial out the side effects if any, which is this technique.
 - (a) Analysis of co variance
 - (b) MANOVA
 - (c) Multivariate ANOVA
 - (d) both (b) and (c)
2. The Kruskalwallis test is also known as _____ ?
 - (a) F test
 - (b) Run test
 - (c) H test
 - (d) t – test
3. With a randomized block design, the experimenter divides subjects into subgroups called blocks, such that the variability within block is _____ than the variability between blocks.
 - (a) More than
 - (b) Equal
 - (c) All of above
 - (d) Less than
4. Form the option given below which one is known as standard score?
 - (a) z- score
 - (b) t- score
 - (c) stanine score
 - (d) All of the above
5. The canonical correlation is a _____ analysis of correlation.
 - (a) Bivariate
 - (b) Multivariate
 - (c) Univariate
 - (d) None of the above
6. MANOVA means?
 - (a) Multivariate analysis of variable
 - (b) Multivariate analysis of co – variance
 - (c) Multivariate analysis of variance
 - (d) None of the above
7. Discriminate analysis assigns objects to _____ group among a number of groups.
 - (a) one
 - (b) two
 - (c) three
 - (d) four
8. Latin squares are a special case of row- column designs, for two blocking factors.
 - (a) False, True
 - (b) True, True
 - (c) True, False
 - (d) False, False
9. Factor analysis is a statistical method used to describe _____ among observed, correlated variables.
 - (a) Variability
 - (b) Reliability
 - (c) both (a) and (b)
 - (d) None of the above
10. Kendall's coefficient of concordance is used to calculate on which scale?
 - (a) Ratio scale
 - (b) Nominal scale
 - (c) both (a) and (b)
 - (d) None of the above
11. When testing for randomness, we can use _____.
 - (a) Sign test
 - (b) Run test
 - (c) Mann- Whitney U test
 - (d) None of the above
12. Spearman's rho and Kendall's tan are used to examine the relationship between _____ variables.
 - (a) Integral
 - (b) Categorical
 - (c) Ratio
 - (d) ordinal
13. In normal curve mean, median and mode are _____.
 - (a) Different
 - (b) Same
 - (c) both (a) and (b)
 - (d) None of the above
14. In regression analysis there are _____ types of variables.
 - (a) 1
 - (c) 2

- (b) 3 (d) None of the above
 15. The level of significance is conventionally chosen as
 (a) 0.05 or 0.01 (c) both (a) and (b)
 (b) 0.5 or 0.1 (d) None of the above

16. The range of normal distribution is _____
 (a) 0 to n (c) 0 to ∞
 (b) -1 to +1 (d) $-\infty$ to $+\infty$

B. Terms/ Short notes/ Case study/ Charts/ Graphs/ Tables, etc. (Each of 01 mark) (07)

1. Define Biserial.
2. Define Point Biserial.
3. Define correlation.
4. Define raw score.
5. Define experimental design.
6. Write a formula of chi – square test.
7. Write a formula of rank correlation.

Q.2 Answer the following.

- A. Explain sign test (04)
 B. Short note on normal probability curve (04)
 C. A one rupee coin is tossed in the air 100 times and the recorded results of these 100 throws indicate 40 heads and 60 tails. Using the chi square test find out whether this result is better than “mere” chance. (04)

OR

- C. Explain test of significance (04)

Q.3 Answer the following.

- A. There are two items X and Y in a test which were responded by a sample of 200, given in the table, compute the phi coefficient of correlation between these two items, given in the following table: (05)

	Item X		Total
	Yes	No	
Yes	55	45	100
No	35	65	100
Total	90	110	200

- B. Explain MANOVA. (05)

- C. There are two sections A and B of class 4 of a school. To test their achievement in maths, two different question papers are prepared. Ramesh, a student of section A got 80 marks. While Suresh, a student of section B got 60. Can you say which of these two students stand better in terms of achievement in Maths ? (05)

Section A	Section B
Mean = 70	Mean = 50
S.D. = 20	S.D. = 10

OR

- C. Explain discriminant analysis. (05)

Q.4 Answer the following.

- A. Find the rank correlation coefficient from the following data and interpret the result. (06)

	Individual	A	B	C	D	E	F	G	H	I	J	K
(X)	Marks in history	80	45	55	56	58	60	65	68	70	75	85
(Y)	Marks in civics	82	86	50	48	60	62	64	65	70	74	90

- B. Explain Qualitative methods and analysis of data. (06)

- C. Compute tetra choric correlation. In order to seek correlation between adjustment and job success, the data was obtained in 2x2 table as shown in the following representation. (06)

	X variable		
	Success	Failure	Total
Adjusted	25	35	60
Maladjusted	20	40	60
Total	45	75	120

OR

- C. Explain Randomized Block design (06)