

MA ECONOMICS
Third Semester
RESEARCH METHODOLOGY
(MEC - 302)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any *four* from *Question no. 2 to 8*
Question no. 1 is compulsory.

1. When Mann –Whitney test is used? (10)

Following are the scores of 12 randomly selected students at the Mid-term and final examinations.

Mid-term Scores (X)	55	57	72	90	57	74
Final Scores (Y)	80	76	63	58	56	37

Test the hypothesis H_0 that the distribution of scores on the two occasions is the same. Use Mann-Whitney test.

2. a. What do you mean by type-I and type-II error? Explain how it is related with hypothesis testing.

b. Explain sampling errors and non sampling errors involved in sample survey.

(3+7=10)

3. a. What do you mean by level of significance in statistical test?

b. For a sample of marks obtained by 20 students with mean 50 and variance 20 , we want to investigate if the average marks obtained by the students is not

52. Considering the significance level $\alpha = 0.0752$, decide if the null hypothesis will be rejected or not. Also calculate p-value for the conclusion.

(2+8=10)

4. a. Explain the significance of Chi-square test in the context of research analysis.
 b. The table given below shows the data obtained during outbreak of smallpox.

	Attacked by smallpox	Not attacked by smallpox	Total
Vaccinated	31	469	500
Not Vaccinated	185	1315	1500
Total	216	1784	2000

Test the effectiveness of vaccination in preventing the attack from smallpox.

Test the result with the help of suitable statistical test at 5% level of significance.

(4+6=10)

5. Answer *any two* of the following:

(5×2=10)

- a. What do you mean by Review of Related Literature? How does it help a Researcher?
 b. What is Conceptual Framework of a Research Study? How is it developed?
 c. What do you understand by Research Design?

6. Define *any four*:

(2.5×4=10)

- a. Research b. Population c. Bibliography
 d. Plagiarism e. Citation

7. What is meant by “sample”? What are the different sampling techniques? Elaborate upon one with a relevant example?

(2+5+3=10)

8. a. Briefly describe the significance of research.

(5+5=10)

- b. Distinguish between applied and fundamental research.

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Duration: 20 minutes

Marks – 20

(PART A - Objective Type)

I. Choose the correct answer:

1×20=20

1. A common test in research demands much priority on
 - (a) Reliability
 - (b) Usability
 - (c) Objectivity
 - (d) All of the above
2. A reasoning where we start with certain particular statements and conclude with a universal statement is called
 - (a) Deductive Reasoning
 - (b) Inductive Reasoning
 - (c) Abnormal Reasoning
 - (d) Transcendental Reasoning
3. The essential qualities of a researcher are
 - (a) Spirit of free enquiry
 - (b) Reliance on observation and evidence
 - (c) Systematization or theorizing of knowledge
 - (d) All the above
4. Arrange the following steps of research in correct sequence-

1. Identification of research problem	2. Listing of research objective
3. Collection of data	4. Methodology
5. Data analysis	6. Results and discussion

 - (a) 1- 2- 3- 4- 5- 6
 - (b) 1- 2- 4- 3- 5- 6
 - (c) 2- 1- 3- 4- 5- 6
 - (d) 2- 1- 4- 3- 5- 6
5. Studies a problem usually from the focus of one discipline is known as _____ research.
 - (a) pure
 - (b) applied
 - (c) empirical
 - (d) none of these
6. A research design is the general blueprint of the collection, presentation, measurement and _____ of data.
 - (a) recommendation
 - (b) analysis
 - (c) formulation
 - (d) none of these
7. All statistical measures devised to describe the data are called _____.
 - (a) Analytic statistics
 - (b) Descriptive Statistics
 - (c) both (a) &(b)
 - (d) None of these

8. When the null hypothesis is true but it is rejected on the basis of the test statistic, the error committed in this case is known as _____.
- (a) Type-I error (b) Type-II error
(c) Level of significance (d) None of these
9. Probability of type-II error is β , and $1 - \beta$ is known as _____.
- (a) level of significance (b) type-I error
(c) power of the test (d) None of these
10. When $1 - \beta$ is close to 1.0, one can infer that the test is working _____.
- (a) quite well (b) poorly
(c) moderately (d) None of these
11. When population normal, population finite, sample size large or small but variance of the population not known, in such a situation _____ test is used.
- (a) F-test (b) z-test
(c) t-test (d) None of these
12. For Chi-square distribution, the smaller the number of degrees of freedom, the more _____ is the distribution.
- (a) skewed (b) symmetric
(c) peaked (d) None of these
13. For Mann-Whitney Test, it is _____ for both samples to be of the same size.
- (a) necessary (b) not necessary
(c) compulsory (d) None of these
14. _____ scale is simply a system of assigning number symbols to events in order to level them.
- (a) Nominal (b) Ordinal (c) Interval (d) None of these

Directions- (Q.No. 15 to 20) On the basis of the data given in the following table, give answers to questions-

Government Expenditures on Social Services
(As percent of total expenditure)

Sl. No.	Items	2007-08	2008-09	2009-10	2010-11
	Social Services	11.06	12.94	13.06	14.02
(a)	Education, sports & youth affairs	4.02	4.04	3.96	4.46
(b)	Health & family welfare	2.05	1.91	1.90	2.03
(c)	Water supply, housing, etc.	2.02	2.31	2.20	2.27
(d)	Information & broadcasting	0.22	0.22	0.20	0.22
(e)	Welfare to SC/ST & OBC	0.36	0.35	0.41	0.63
(f)	Labour and employment	0.27	0.27	0.22	0.25
(g)	Social welfare & nutrition	0.82	0.72	0.79	1.06
(h)	North-eastern areas	0.00	1.56	1.50	1.75
(i)	Other social services	1.29	1.55	1.87	1.34
	Total Government expenditure	100.00	100.00	100.00	100.00

15. How many activities in the social services are there where the expenditure has been less than 5 per cent of the total expenditures incurred on the social services in 2008-09?
(a) One (b) Three (c) Five (d) All the above
16. In which year, the expenditures on the social services have increased at the highest rate?
(a) 2007-08 (b) 2008-09 (c) 2009-10 (d) 2010-11
17. Which of the following activities remains almost stagnant in terms of share of expenditures?
(a) North-eastern areas (b) Welfare to SC/ST and OBC
(c) Information and broadcasting (d) Social welfare and nutrition
18. Which of the following item's expenditure share is almost equal to the remaining three items in the given years?
(a) Information & broadcasting (b) Welfare to SC/ST and OBC
(c) Labour and employment (d) Social welfare and nutrition
19. Which of the following items of social services has registered the highest rate of increase in expenditures during 2007-08 to 2010-11?
(a) Education, sports and youth affairs (b) Welfare to SC/ST and OBC
(c) Social welfare and nutrition (d) Overall social services
20. Which of the following items has registered the highest rate of decline in terms of expenditure during 2007-08 to 2009-10?
(a) Labour and employment (b) Health and family welfare
(c) Social welfare and nutrition (d) Education, sports and youth affairs
