2025

EDUCATION

MAEDNC401

(*Educational Statistics*)

Full Marks : **80**

Time : **3** hours

The figures in the margin indicate full marks for the questions

Answer the following questions: 1x10=10

1. Which of the following is **not** an assumption of parametric statistics?
   (a) Information about population is not known
   (b) Population is normally distributed
   (c) Variables are in ratio or interval scale
   (d) All of the above
2. Mention one example of inferential statistics.
3. Which one of the following is the correct in regard to negative skewness?
   (a) M>Md>Mo (b) M<Md<Mo
   (c) M=Md=Mo (d) Md<M<Mo
4. If Ku > 0.263, the curve is _____ (platykurtic/leptokurtic). (Fill in the blank with the right option)
5. The difference between sample statistics and population parameter is known as—
   (a) Standard error (b) Standard difference
   (c) Sampling distribution (d) Sampling error
6. Which type of sampling cannot be used if the population is infinite?
   (a) Simple random (b) Stratified
   (c) Systematic (d) Cluster
7. Who introduced t- test?
8. Write one limitation of t-test.
9. Who developed Product moment correlation?
10. Who introduced the concept of Chi -square test?

Answer the following questions: (any five) 6x5=30

11. Differentiate between parametric and non-parametric statistics.
12. Assuming normal distribution, find out the limits of middle 52% of cases, if mean is 14 and SD is 2.
13. In a group of 489 candidates for railway recruitment test, the mean score was recorded as 89 and standard deviation as 23. Determine the 95% confidence interval for true mean.
14. Determine whether the following value of r is significantly different from zero: r=0.30 and N=25.
15. In an experiment, the students of Class 9 were divided into two groups—Experimental group and Control group. The experimental group was taught some lessons by integrating ICT while the control group was taught in conventional methods without ICT. The results are as follows—

Experimental Group	Control Group
N=78	N=61
SD=7.5	SD=9.2
M=40	M=31

Test the significance of the difference between the mean of the two groups at 0.05 level of significance.

16. Define negative correlation, Positive correlation and perfect correlation?
17. Write the assumptions of using Chi-square test.

Answer the following questions: (any four) 10x4=40

18. In an Army Alpha Intelligence Test, the distribution of scores is found to be normal with a mean of 108 and SD of 18. 5+5=10
    (a) What percentage of scores lies between 88 and 123?
    (b) The middle 62% fall between what two scores?
19. The level of hemoglobin in blood samples were collected from 11 males. The mean was found to be 15.4 and SD 2.2. Find out at both 95% and 99% confidence interval the limits of the true mean.

20. During practice, in the first trial of a practice period, the mean score of 29 cricketers is found to be 98 and SD to be 6. The mean of scores in the 5th trial is found to be 112 and SD to be 9. The r between scores on the first and fifth trial is 0.61. The hypothesis is formulated as "practice leads to gain". Test whether the gain in score is significant at 0.05 and 0.01 levels.
21. On a test of non-verbal reasoning, 30 boys and 40 girls obtained the following scores of independent samples:

	Boys	Girls
Mean	40.40	35.80
S.D.	8.7	8.3

Is the mean difference of boys and girls on reasoning significant?

22. A study was conducted to determine the effect of three different techniques of baking a cake. Three groups, each consisting of 8 trainees of a baking class, assigned randomly, were asked to bake the cake using these three different techniques. The scores obtained on a baking test were as follows—

Group A:	3	2	3	1	7	5	6	2
Group B:	4	6	3	4	9	2	5	3
Group C:	4	5	3	1	7	3	2	4

Test the difference between groups by adopting the analysis of variance technique.

23. State uses of correlation in education. Find the coefficient of correlation between the following two sets of scores using the product moment method and interpret the result. 3+7=10

Subject:	A	B	C	D	E	F	G	H
Test—I:	15	18	22	17	19	20	16	21
Test—II:	40	42	50	45	43	46	41	41

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