MA EDUCATION
SECOND SEMESTER [REPEAT]
STATISTICS IN EDUCATION
MAE – 202
[USE OMR SHEET FOR OBJECTIVE PART]

SET A

Duration: 3 hrs.   Full Marks: 70

Objective

Time: 30 mins.   Marks: 20

Choose the correct answer from the following: $1 \times 20 = 20$

1. Chi-square tests uses:
   a. Discrete data
   b. Categorical data
   c. Both a and b
   d. Continuous data

2. The null hypothesis is always tested at:
   a. 0.01 level of significance
   b. 0.05 level of significance
   c. 0.10 level of significance
   d. Both 0.01 and 0.05 levels of significance

3. Type II error is .... harmful to/than type I error:
   a. More
   b. Less
   c. Equally
   d. Variably

4. Chi square test was developed by:
   a. Fredrick Robert Helmert
   b. Karl Pearson
   c. Carl Freidrich Gauss
   d. Adraine

5. In linear correlation, the relationship between the two set of scores can be represented graphically in a:
   a. Projectile
   b. Curve
   c. Straight line
   d. Slope

6. Significance of the sample mean is an ....of the population mean:
   a. Indicator
   b. Assessment
   c. Guarantee
   d. Ideal estimate

7. 1 t test is also known as:
   a. Directional test
   b. Non- directional test
   c. 1 way test
   d. 2 way test

8. .... indicates perfect positive correlation:
   a. -2
   b. +1
   c. -1
   d. +2

9. Which of the following statement is true?
   a. Type I error is more harmful than Type II error
   b. The 2 t test is tested only in one direction
   c. Significance of the mean is an indicator of an ideal situation in research
   d. H0 is used to indicate significant differences between the variables

10. The total area under the curve is arbitrarily taken to be:
    a. 10   b. 100
    c. 1000   d. 10000

11. In an NPC, the mean, median and mode is:
    a. 0   b. 1
    c. 2   d. 3

12. The variables involved in Parametric tests must be measured in:
    a. Interval scale   b. Both a and c
    c. Ratio scale   d. Only b

13. ....tests are not based on the assumption of normal distribution of population:
    a. Parametric   b. Significance
    c. Non-Parametric   d. ANOVA

14. When the distribution curve is normal, the value of Kurtosis (Ku) is:
    a. 0.236   b. 0.231
    c. 0.261   d. 0.263

15. ....refers to a lack of symmetry:
    a. Skewness   b. Kurtosis
    c. Normal Curve   d. Both a and b

16. The full form of 'df' is:
    a. Decree of freedom   b. Degree of freedom
    c. Decree of flexibility   d. Degree of flexibility

17. The normal curve extends between:
    a. $\pm 1\sigma$ and mean   b. $\pm 2\sigma$
    c. $\pm 1\sigma$ d. $\pm 3\sigma$

18. ....is a test of significance when we have data expressed in the form of frequencies:
    a. T-test   b. ANOVA
    c. z-test   d. Chi-square

19. The hypothesis which states that no difference exists between the scores of the variables are:
    a. Null hypothesis   b. Research hypothesis
    c. Alternate hypothesis   d. Statistical hypothesis

20. A composite procedure for testing the significance of the mean difference between more than two samples is:
    a. Chi-square   b. ANOVA
    c. t-test   d. Mann Whitney test

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Descriptive

Time : 2 Hr. 30 Mins.   Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is the meaning of Statistics? Give the uses of Statistics in Education and Psychology.   3+7=10

2. Discuss divergence in normality. In case of normal distribution what should be the value of skewness?   8+2=10

3. In a particular test, there were 16 independent observations of a certain magnitude with a mean of 100 and SD of 24. Find out at both 0.05 and 0.01 levels of confidence, the limits of the confidence interval for the population mean.   10

4. a) How does the procedure for determining the significance of the mean of a small sample differ from that of a large sample?   2+8=10
   b) 40 boys and 50 girls of class 9 were asked to choose one elective subject among advanced mathematics, Information Technology, Hindi, Assamese. The choices of the boys and girls are as follows:

| Students | | | | | |
Sex	Advanced Mathematics	Information Technology	Hindi	Assamese	Total
Boys	14	12	6	8	40
Girls	12	20	8	20	50

Test the hypothesis that, the choice of the subject is dependent upon the gender of students

5. A mathematics teacher divides his class into two random groups. He provides special coaching in computation skill for an hour daily to the experimental group hoping that such a drill will promote the computation skill of the students of this group. The control group is not provided any such drill. At the end of the session, he administers an achievement test and collects data as under: 10

	Experimental group	Control group
Mean	35	30
SD	4	3
No. of students	48	45

Is the gain in mathematics significant enough?

6. The following are mathematics scores for three groups of equal subjects tested: 10

Group I	Group II	Group III	Group IV
4	9	2	7
5	10	2	7
1	9	6	4
0	6	5	2
2	6	2	7

Apply the Analysis of Variance to test the null hypothesis.

7. What is Pearson's correlation coefficient? Find out the Product Moment $2+8=10$
correlation coefficient:

Individuals	Scores in test X	Scores in test Y
A	15	60
B	25	70
C	20	40
D	30	50
E	35	50

8. Write short notes on: $5+5=10$
   a) Chi-square as a test of goodness-of-fit.
   b) Assumptions of ANOVA

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