B.Sc. FOOD SCIENCE & TECHNOLOGY
FOURTH FSEMESTER
STATISTICS & DATA ANALYSIS
BFST – 405 [REPEAT]
(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.   Full Marks : 70

[PART-A: Objective]

Time : 20 min.   Marks : 20

Choose the correct answer from the following: *1X20=20*

1. Which of the following statement is true.
    a. Research is based on evidence   b Research is based on Statistical Method
    c. Research is based on Scientific method d All of the above

2. Data is
    a. evidence for a research   b. numerical figures for research
    c. Statistical measure   d. All of the above

3. Repetition of treatment in an experiment is
    a. randomization   b. replication
    c. local control   d. none of the above

4. A part of a Universe / Population is called
    a. sample   b. sampling
    c. parameter   d. statistic

5. The sampling in which the sample units are selected randomly from a population, is called
    a. non-probability sampling   b. probability sampling
    c. mixed sampling   d. none of the above

6. The methods of data analysis in research are
    a. scientific methods   b. experimental methods
    c. statistical methods   d. None of the above

7. A research hypothesis is
    a. the possible outcomes of a research   b. the possible outcomes of research
       problems   questions
    c. both A and B   d. neither A nor B

8. The best measure of central tendency is _____.
    a. mean   b. median
    c. mode   d. None of the above

9. Which of the following function is used to determine the arithmetic mean of a set of values in Excel?
    a. AVERAGE()   b. MEAN()
    c. Either A or B   d. none of the above.

[1]

10. Correlation is
    a. the mathematical function of the average relationship between two variables the relationship between two variables
    b. aelationship between two variables
    c. Both a and b
    d. Neither a nor b

11. Which of the following test statistic is used in ANOVA?
    a. Z
    b. t
    c. F
    d. χ^2

12. Null hypothesis is accepted, when
    a. Test statistic value is greater than the critical value
    b. Test statistic value is less than or equal to the critical value
    c. Test statistic value is not equal to the critical value
    d. None of the above.

13. t-test is used when
    a. Sample size is large and population standard deviation is given
    b. Sample size is small and population standard deviation is given.
    c. Sample size is small and population standard deviation is not given.
    d. Sample size is large and population standard deviation is not given

14. Pressure and Temperature of a perfect gas, is an example of:
    a. Zero correlation
    b. Negative correlation
    c. Positive correlation
    d. None of the above

15. Which of the following application is used for graphs and diagrams?
    a. Power point
    b. Excel
    c. Word
    d. None of the above

16. Diagrams are drawn on _____
    a. Plain papers
    b. Graph papers
    c. Both a and b
    d. none of the above

17. There are at most _____ for two variables X and Y.
    a. one regression line
    b. two regression lines
    c. three regression lines
    d. an infinite number of regression lines

18. The tangible parts of the computers are called_____
    a. hardware
    b software
    c. drivers
    d. processors

19. The sampling in which the sample units are selected by judgement from a population, is called
    a. probability sampling
    b. non-probability sampling
    c. mixed sampling
    d. None of the above

20. Which of the following is type II error?
    a. Rejecting the null hypothesis when it is true.
    b. Rejecting the null hypothesis when it is not true
    c. Accepting the null hypothesis, when it is true.
    d. Accepting the null hypothesis, when it is not true.

Time : 2 hrs. 40 min.   Marks : 50

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

1. Explain the meaning of Research. Write in brief the importance of Statistics in Research.   2+8=10

2. Determine mean, median, mode, standard deviation from the following distribution: 10

   Weight : 40 – 45, 45 – 50, 50 – 55, 55 – 60, 60 – 65, (Kg) 65 – 70

   No. of   6   10   18   27   20
   students   12

3. Distinguish between correlation and regression.   5+5=10
   Explain Spearman's rank correlation

4. What are the assumptions of Analysis of Variance (ANOVA).   5+5=10
   Write the steps of the testing of hypothesis

5. The following data give yield on 10 plots of land in three samples   10
   of 4 plots, 3 plots and 3 plots, under the three varieties of
   fertilizers A, B and C

   A   B   C
   25   20   24
   22   17   26
   24   16   30
   21

   Test at 5% level of significance whether there is any significant
   difference in the average yields of land under the three varieties
   of fertilizers.[Given, the critical value of F at 5% level of
   significance and (2, 7) degrees of freedom is 4.74.

6. a. Explain the functions of the various components of a computer   6+4=10
      system.
   b. Discuss the different statistical tool used in data analysis

[3]

7. a. Write short notes on the importance of frequency table and graph for the presentation and analysis of data. 6+4=10

   b. Distinguish between hardware and software.

8. a. Write the importance of documentation in Research.. 5+5=10

   b. Mention the various steps in report writing.

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