STAT-231

Section A

1) Define statistics and state the limitations and functions.

2) Define Classification and explain its types in detail.

3) Define Arithmetic mean and median explain the method of mean in case individual series and Median in case of continuous series.

4) State the characteristics of measure of good average and state the properties of measure dispersion.

5) Define Range and its coefficient.

6) Define standard deviation and explain the method in case of continues series.

7) Define correlation and explain its types.

8) Define Scatter diagram in detail.

9) Define regression and its uses.

10) Explain the regression equation.

11) State the difference between regression and correlation.

12) Define the following terms (with example)

i) sample ii) population iii) parameter iv) statistic

13) What are the types of sampling (Enlist only)

OR Explain the concept of Random Sampling and Standard error.

14) Define the following terms (with example)

i) Simple event ii) Compound event iii) Complimentary event

iv) Equally likely event v) mutually exclusive event

15) Define the probability and solved the problem Tossing a two coin the find out the probability of getting two head.

16) Define Normal distribution and state the properties

17) State the Addition and Multiplication theorem.

18) Explain the terms:

i) Null and Alternative Hypothesis.

ii) Type I and Type II error

19) Explain the t test (one sample T test)

20) Explain chi square test of goodness of fit and independence of attribute.

21) Explain the Equality of variance (F test).

22) Explain steps involving testing of hypothesis.

23) Define ANOVA and state the assumptions.

23) Explain one way classification.

Section B

Que.1) Fill in the blanks:

1) The sum of deviations of items from their mean is **0**
2) Standard normal variable is written as **R. A. Fisher.**
3) Most frequently occurring items in the series is called **Mode.**

4) **Regression** Technique is used for prediction.

5)) **F test** is used to test means of two populations.

6) The standard Deviation of sample mean distribution is known as **Standard error**.

7) Probability of sure event is (happening) **1.**

8) Independence attribute is tested by **Chi- square test**

9) The difference between the upper limit and lower limit of class interval is called as **Magnitude of class interval**

10) Homogeneity of two sample variance is tested by **F test**

11) Small sample test is applied when sample size is less than **30**

12) Large sample test is applied when sample size is greater than **30**

13) The middle of an ordered series is called Second **quartile**

14) Standard normal variable has **0** mean.

15) Variance ratio test is also called **F-test**

16) Chi square test is **Non-parametric test**

17) Probability always lies between **0 to 1**

18) The value of regression coefficient lies between -**∞ to +∞**

19) The geometric mean for the series 10, 2,0,7,1 is **0**

20) The value of **Median** can be determined by ogive curve.

21) Skewness and kurtosis are the types of measure of **Dispersion**

22) If calculated less than table value result is Non significant than null hypothesis is rejected

23) The number of seeds per pod is **Discrete** variable

24) **Classification** is the process of arranging things or items in groups or classes according to their resemblance and characteristics.

25) All possible outcome of an experiment is called **Random experiment** Event.

26) When the data is grouped with reference to time, we have **Chronological classification**

27) Standard deviation is written as **R. A. Fisher**.

28) For a set of values the model value can be **Unimodel, bimodal and Trimodel.**

29) Which measure is affected by the presence of extreme values **Mean Deviation**

30) Variance is square of **standard deviation**

31) Probability is expressed as **Ration , percentage & proportion**

32) If each and every unit of population has equal chance being selected in the sample is called as **Simple random sampling**

33) A hypothesis may be classified as **Simple , Composite & Null**

34) Area of the critical region depends upon **Size of type I error**

35) In paired t- test with n observations in each group the degree of freedom is **n-1**

36) The calculated value chi-square is **Always positive**

37) **Mean** is affected by extreme values.

38) The probability of impossible (Not happening/non occurrence) event is **0**

39) **Correlation** is the study of relationship between two or more variable.

40) To investigate whether there is any relation between the variable X and Y

Let (x1, y2), (x2, y2)….. (Xn, yn) be n pairs observation is called **scatter diagram**

41) **Regression** is the study of average relationship between two

variables.

42) When the collected data is grouped with reference to area, we have **geographical Classification**.

43) Mean and variance are equal in **Poisson** distribution.

44) Relative measure of dispersion is also called **Coefficient of dispersion**

45) Correlation of coefficient is **Relative** measure.

46) Number of grains on an ear is **Discrete** Variable.

47) A normal variable with zero mean and unit variance is called **Normal population**

48) Chi square test applied for testing of equality of **Variance.**

49) Histogram can be drawn only for **Continuous** distribution.

50) Second quartile and **Fifth** decile are same.

51) Any population is constant is called **Parameter**

52) Father of Statistics is **R. A. Fisher**

53) If **A'** compliment of event **A** then P (A') = **1-P (A)**

54) Conclusion drawn from sample is called **Statistics**

55) Harmonic mean of 0,1,2,3 and is **0**

56) The probability of type I error is called **Level of significance**

Que.2)State TRUE or FALSE:

1) Regression technique is useful for prediction.

Ans: True

2) Probability of sure/possible/occurrence event one.

Ans: True

3) Student's t test is applicable in case of small sample.

Ans: True

4) Technique of analysis of variance is developed by R.A.Fisher.

Ans: True

5) Sum of deviations of variable from arithmetic mean is equal to zero.

Ans: True

6) The variance of standard normal variable is zero.

Ans: False

7) Probability of null/impossible /non occurrence event is one

Ans: False

8) A series said to be consistent when its coefficient of variation is least.

Ans: False

9) Probability of impossible event is zero.

Ans: Ans: True

10) T test is called as variance ratio test.

Ans: False

11) Standard normal variable if squared then its gives to rise to chi square variable.

Ans: True

12) Mode is nor rigid measure

Ans: True

13) Chi-square test is non parametric test.

Ans: True

14) Poisson distribution is a continues distribution.

Ans: False

15) Normal distribution has bell shaped, symmetric frequency curve.

Ans: True

16) The trials in binomial distribution are bernoulian.

Ans: True

17) All possible outcome of trial are called exhaustive event

Ans: False

18) Mode can be graphically located.

Ans: True

19) Statistics deals with an individual.

Ans: False

20) Coefficient of variation is independent units

Ans: False

21) Level of significance is the size type I error

Ans: True

22) Frequency polygon cannot be constructed with the help of histogram.

Ans: False

23) The series for which C.V is greater is said to be more consistent.

Ans: True

24) Range of coefficient of regression -1 to +1

Ans: False

25) Standard deviation is measure of central tendency.

Ans: False

26) Two regression coefficient of regression byx and bxy should posses' dissimilar sign.

Ans: false

27) Standard deviation is influenced by extreme items.

Ans: True

28) Correlation coefficient can take only value between zero and infinity

Ans: False

29) The frequency curve of normal distribution is symmetric.

Ans: True

30) Mean deviation is minimum when deviation is taken from mean.

Ans: true

31) Quartile deviation is equal to inter-quartile range.

Ans: True

32) Harmonic mean is a reciprocal of the arithmetic mean of the observations of data set.

Ans: True

33) Median is mathematical average.

Ans: **True**