

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

In the Name of Allāh, the Most Gracious, the Most Merciful

MidTerm Papers Solved MCQS with Reference (1 to 22 lectures)

1. The probability of drawing a "white" ball from a bag containing 4 red, 8 black and 3 white balls is:

- 0
- $\frac{3}{15}$
- $\frac{1}{12}$
- $\frac{1}{2}$

The total probability of choosing white ball is $4 + 8 + 3 = 15$, $\frac{3}{15}$

2. If the probability of one event does not affected by the occurrence of another event then both events are:

- Dependent
- Not Mutually Exclusive
- Mutually Exclusive
- Independent**

PG # 162 (Lec # 22)

3. A die is rolled. What is the probability of getting a number that is an even number and greater than 2.

- 1/2
- 1/3
- 2/3
- 5/6

2, 4, 5, 6: even or greater than 2. That means 2 out of 6 is 2/3

4. The collection of all the elements under study is called:

- Population** PG # 12 (Lec # 2)
- Sample
- Data
- Registration

5. The mode value from raw data can be obtained by the help of

- Dot plot** PG # 53 (Lec # 6)
- Stem and leaf plot
- Bar chart
- None of these

6. A student solved 25 questions from first 50 questions of a book. The probability that he will solve the remaining all questions is:

- 0.25
- 0.5**
- 1
- 0

7. The difference between the largest and the smallest data values is called the

- Variance
- Interquartile range
- Range** **PG # 83 (Lec # 10)**
- Coefficient of variation

8. Which one is the formula of mid-quartile range:

- $Q_3 - Q_1$
- $\frac{Q_3 - Q_1}{2}$
- $\frac{Q_1 - Q_3}{2}$
- $\frac{Q_1 + Q_3}{2}$ **PG # 80 (Lec # 9)**

9. For the given data 2, 3, 7, 0, -8; G. M will be:

- Negative
- Positive
- Zero
- Undefined**

Geometric mean cannot be calculated for negative values

10. If X and Y are independent variables then $\text{Var}(X-Y) =$ _____

- Var(X) - Var(Y)**
- $\text{Var}(X) + \text{Var}(Y)$
- $\text{Var}(X+Y)$
- $\text{Var}(X) \times \text{Var}(Y)$

11. Rang measures the dispersion around the _____

- Extreme values
- Minimum value
- Maximum value
- Mid-range value** PG # 86 (Lec # 10)

12. The variable plotted on the horizontal or X-axis in a scatter diagram is called the:

- Scatter variable
- Independent variable** PG # 121
- Dependent variable
- Correlation variable

13. In a scatter diagram we plot:

- X and Y** PG # 121 (Lec #15)
- X and \hat{Y}
- Y and \hat{Y}
- \hat{Y} and X

14. If $P(A \cap B) = P(A|B) \times P(B)$ then A and B will be:

- Independent**
- Mutually Exclusive
- Dependent
- Equally Likely

15. Which one of the following is the class frequency?

- The number of observations in each class**
- The difference between consecutive lower class limits
- Always contains at least 5 observations
- Usually a multiple of the lower limit of the first class

16. How to convert a frequency distribution to a relative frequency distribution?

- Find the difference between consecutive lower class limits
- Find the difference between consecutive lower limits
- Count the number of observations in the class
- Divide the class frequency by the total number of observations PG # 31 (Lec # 4)**

17. In statistics, we deal with:

- Individuals
- Isolated items
- Aggregates of facts** PG # 7
- Qualitative data

18. Pie chart consists of

- A rectangular
- A triangle
- A square
- A circle** PG # 23 (Lec # 3)

19. When $Q_1 = 2$ and $Q_3 = 4$, what is the value of Median, if the distribution is symmetrical:

- 1
- 2
- 3
- 4

PG # 112 (Lec # 14)

20. A letter is chosen at random from the word STATISTICS. The probability of getting a vowel is:

- 3/10
- 4/10
- 5/10
- 6/10

21. When two coins are tossed simultaneously, P (one head) is:

- $\frac{1}{4}$
- $\frac{1}{2}$
- $\frac{3}{4}$
- 1

Total Sample HH,TH,HT,TT Probability One Head TH,HT So $2/4=1/2$

22. A value which has half of the observations above it and half of the observations below it; is known as.....

- Rang
- Median
- Mean
- Mode

PG # 64 (Lec # 7)

23. In a set of 20 values all the values are 2, what will be the Geometric Mean?

- 2
- 5
- 10
- 20

24. Which of the following measure of dispersion is least affected by the extreme values in a data?

- Range PG # 83 (Lec # 10)
- Quartile deviation
- Mean absolute deviation
- Standard deviation

25. Which is appropriate average for finding the average speed of a car:

- Mean
- Geometric mean
- Harmonic mean PG # 78 and 79 (Lec # 9)
- Weighted mean

26. What will be the value of the total amount of dispersion obtained by summing the $(X-\bar{X})^2$

- 0 PG # 88 (Lec # 11)
- 1
- 1
- 100

27. The deviation of a distribution from symmetry is called:

- Kurtosis
- Skewness** PG # 86 (Lec # 10)
- Dispersion
- Flatness

28. For the independent events A and B if $P(A) = 0.25$, $P(B) = 0.40$ then $P(A \cap B) = \dots\dots\dots$

- 0.65
- 0.1**
- 0.50
- 0.15

$$P(A \cap B) = P(A) \times P(B) = 0.25 \times 0.40 = 0.1$$

29. The variable plotted on the vertical or Y-axis in a scatter diagram is called the:

- Scatter variable
- Independent variable
- Dependent variable** PG # 121
- Correlation variable

30. In a multiplication theorem $P(A \cap B)$ equals:

- $P(A) P(B)$
- $P(A) + P(B)$
- $P(A) \times P(B|A)$** PG # 162 (Lec # 21)
- $P(B|A) \times P(B)$

31. For two independent events A and B, if $P(A) = 0.2$ and $P(B) = 0.4$, then what is $P(A \cap B)$?

- 0.06
- 0.08
- 0.02
- 0.04

$$P(A \cap B) = P(A) \times P(B) = 0.2 \times 0.4 = 0.08$$

32. The level of satisfaction for a certain facility which Govt. is providing is the example of:

- Constant
- Qualitative variable
- Variable
- Quantitative variable

Quantitative variable when a characteristic can be expressed numerically such as age, weight, income or number of children. On the other hand, if the characteristic is non-numerical such as education, sex, eye color, quality, intelligence, poverty, satisfaction, etc. the variable is referred to as a **qualitative variable**.

33. Quantitative variable is further divided into:

- Continuous variable
- Discrete variable
- Continuous & Discrete variable
- None of the above

PG # 9 (Lec # 1)

34. If you connect the mid-points of rectangles in a histogram by a series of lines that also touches the x-axis from both ends, what will you get?

- Ogive
- Frequency polygon
- Frequency curve
- Histogram

PG # 32 (Lec # 4)

35. Which type of data is collected in population census?

- Grouped data
- Secondary data
- Primary data**
- Array data

36. Data obtained from the Bureau of Statistics, is an example of:

- None of these
- Primary data
- Secondary data** **PG # 12 (Lec # 2)**
- Qualitative data

37. A set that contains all possible outcomes of a system is known as

- Finite Set
- Infinite Set
- Universal Set** **PG # 134**
- None of these

38. In positively skewed distribution, which of the following relationship exists:

- The mean, median, and mode are all equal
- The mean is larger than the median** [Click Here For More Detail](#)
- The median is larger than the mean
- The standard deviation must be larger than the mean or the median

39. For two mutually exclusive events A and B, $P(A) = 0.2$ and $P(B) = 0.4$, then $P(A \cup B)$ is:

- 0.8
- 0.2
- 0.6
- 0.5

PG # 154

$$P(A \cup B) = P(A) + P(B) = 0.2 + 0.4 = 0.6$$

40. When two coins are tossed the probability of at most one head is:

- 1/4
- 2/4
- 3/4
- 4/4

41. In a set of 20 values all the values are 10, what will be median?

- 2
- 5
- 10
- 20

42. Which one of the following measure is not based on all the observations?

- Arithmetic Mean
- Geometric Mean
- Harmonic Mean
- Mode

43. A five-number summary consists of :

- $X_0, Q_1, \text{Median}, Q_3, \text{and } X_m$ **PG # 97 (Lec # 12)**
- $X_m, Q_1, \text{Mean}, Q_3, \text{and } X_0$
- $X_m, Q_1, \text{Mode}, Q_3, \text{and } X_0$
- $X_0, Q_1, \text{Median}, Q_2, \text{and } X_m$

44. For what condition of k, at least $1 - 1/k^2$ of the data-values fall within k standard deviations of the mean:

- Greater than 1** **PG # 94 (Lec # 12)**
- Less than 1
- Greater or equal to 1
- Less or equal to 1

45. Which of the following can never be taken as the probability of an event?

- 1
- 0
- 0.5
- 0.5**

Probability always lie between 0 and 1

46. If E is an impossible event, then P(E) is:

- 1
- 0.15
- 0**
- 0.5

47. The average which is defined as the reciprocal of the arithmetic mean of the reciprocals of the values is called:

- Geometric Mean
- Harmonic Mean** PG # 77 (Lec # 9)
- Mode
- Median

48. An automobile is running, during the first 60 Km, at the rate of 10 Km/hr. During the second 60 Km at the rate of 30Km/hr, while during the third 60 Km its speed was 40 Km/hr. What method is more appropriate to calculate the average speed?

- Median
- Arithmetic mean
- Harmonic mean** PG # 78 (Lec # 9)
- Geometric mean

49. What is the standard deviation of the following values? 7, 7, 7, 7,7, 7, 7

- 7
- 1
- 49
- 0** [Click Here For Reference](#)

50. Which one of the following is a meso-kurtic curve?

- Negatively skewed
- Positively skewed
- J-shaped
- Normal** PG # 114 (Lec # 14)

The **NORMAL curve** is a curve which is neither very peaked nor very flat, and hence it is taken as A BASIS FOR COMPARISON. The normal curve itself is called **MESOKURTIC**.

51. Men tend to marry women who are slightly younger than themselves. Suppose that every man married a woman who was exactly 5 years younger than themselves. Which of the following is correct?

- The correlation coefficient is -5
- The correlation coefficient is 5
- The correlation coefficient is 1**
- The correlation coefficient is 0

The relationship is perfect, with no error

52. Which of the following comes first to make frequency distribution.

- Number of Groups
- Class interval
- Range**
- Tally marks

PG # 28

53. Data obtained from the Ministry of food, is an example of:

- Primary data
- Secondary data**
- Qualitative data
- None of these

PG # 12 (Lec # 2)

54. Total angle of a Pie Chart is:

- 90"
- 180°
- 270°
- 360°**

PG # 23 (Lec # 3)

55. Which one is the formula of range:

- $x_m - x_0$ PG # 28 (Lec # 4)
- $x_0 - x_m$
- $\frac{x_0 - x_m}{2}$
- $\frac{x_0 + x_m}{2}$

56. If a player well shuffles the pack of 52 playing card, then the probability of a black card from 52 playing cards is:

- 1 /52
- 13/52
- 4/52
- 26/52

57. Pearsons coefficient of skewness is not possible if standard deviation is:

- 1
- 1.5
- 0 PG # 109 (Lec # 13)
- 3

58. What is the difference between permutation and combination?

- In permutation order is important and in combination order is not important**
[Click Here For Reference](#)
- In permutation order is not important and in combination order is important
- Only combination is based on the classical definition of probability
- Only permutation is based on the classical definition of probability

59. If data is categorized about any characteristic, then which measurement scale should be used?

- Ordinal
- Interval
- Nominal**
- Ratio

PG # 9 (Lec # 1)

60. Which of the following scale has true zero point?

- Ratio Scale**
- Interval scale
- Nominal scale
- Ordinal scale

PG # 9 (Lec # 1)

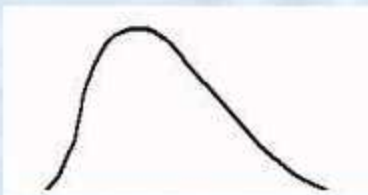
61. In a simple bar chart:

- Width of bar is meaningful
- Height of bar is meaningful
- Height of bar is not meaningful
- Height and width both are meaningful**

PG # 24

A simple bar chart consists of horizontal or vertical bars of equal width and lengths proportional to values they represent

62. What is the name of following curve?



- Positively skewed curve**
- Symmetrical curve
- Normal curve
- Negatively skewed curve

PG # 39

63. If $A = \{1, 2, 3, 4, 5, 10\}$ and $B = \{1, 3, 5\}$ then $B \subset A$ means:

- A is less than B
- A is contained in B
- B is contained in A.** PG # 134 (Lec # 16)
- B is less than A

64. The graph of cumulative frequency distribution is called:

- Frequency polygon
- Ogive** PG # 43 (Lec # 5)
- Frequency curve
- Histogram

65. Given the series 1,2,1,1,2,2,2,2,3,4,5,3,2,3,1,4,2,3. Which one of the following is mode of the given series:

- 4
- 3
- 3
- 2
- 3
- 2
- 1**
- 3
- 2*

66. Which one of the following is equal to the 2nd quartile:

- P_{33}
- D_3
- Median** PG # 69 (Lec # 8)
- Mode

67. The variance of a sample of 81 observations equal to 64. The standard deviation of the sample is equal to:

- 256
- 4096
- 8
- 6,561

68. Under which condition standard deviation could assume a negative value:

- When more than half of the data values are negative
- If all the data values are same
- The standard deviation cannot be negative**
- When all the data values are negative

Standard deviation cannot be negative because it is square rooted variance.

69. In a set of 10 values all the values are 5, what will be the D_5 ?

- 2
- 5
- 2
- 5
- 10
- 20

[Click Here For Reference](#)

70. When three, coins are tossed simultaneously, P (3 Heads) is:

- 3/8
- 1/8
- 4/8
- 2/8

71. The distribution is mesokurtic if the moment ratio i. e. b_2 is:

- Equal to 0
- Equal to 3** PG # 119 (Lec # 14)
- Less than 3
- Greater than 3

72. A set is any well-defined collection of

- Positive Objects
- Negative Objects
- Same Objects
- Distinct Objects** PG # 133 (Lec # 16)

73. If an observation in the data set is negative, then the geometric mean is:

- Positive
- negative
- Zero
- undetermined**

74. Mean deviation is least when it is calculated from _____.

- Mean
- Mode
- Median**
- Geometric mean

Mean deviation is minimum if the deviations are taken from the median.

75. For a positively skewed distribution m_3 will be:

- Positive** PG # 119 (Lec # 14)
- Negative
- Zero
- 1

76. Which of the following value could not represent a coefficient of correlation?

- $r = 0.93$
- $r = 1.09$** PG # 128 (Lec # 15)
- $r = -0.73$
- $r = -1$

r is a pure number that lies between -1 and 1 i.e. $-1 < r < 1$

77. The conditional probability is $P(A|B)$ is given by formula:

- $\frac{P(A \cup B)}{P(A)}$
- $\frac{P(A \cap B)}{P(B)}$** PG # 159 (Lec # 20)
- $\frac{P(A \cap B)}{P(A)}$
- $\frac{P(A \cap B)}{P(B)}$

78. If a curve has a longer tail to the right, it is called :

- Positively skewed** PG # 39 (Lec # 5)
- Negatively skewed
- J-shaped
- Symmetric

79. Which of the following scale has not true zero point?

- Nominal scale
- Ordinal scale
- Interval scale** PG # 9 (Lec # 1)
- Ratio scale

80. Mean is affected by the change of:

- Origin Only
- Scale Only
- Origin and Scale**
- Not affected

Arithmetic Mean is affected due to the change of origin and scale.

81. What will be the mode for the data 2,3,4,5,4,6,4?

- 2
- 3
- 4**
- 5

The mode is the value which appears the most often in the data. It is possible to have more than one mode if there is more than one value which appears the most.

82. In a set of 20 values all the values are 5, what will be the mean?

- 4
- 5**
- 10
- 20

83. It is easy to find the median when data is.....

- Arranged**
- Discrete
- Attributed
- Continuous

The **median** of a set of data values is the middle value of the data set when it has been arranged in ascending order. That is, from the smallest value to the highest value.

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*Winning is not everything,
but wanting to win is
everything.....
Go Ahead.... Best Of Luck !*