

Mathematics & Statistics -II

Choose the correct alternative from the following:

- If $f(0)$, $f(1)$, $f(2)$ are the same, then f is a constant function.
a. True b. False c. not necessarily d. does not know
- The demand function $D=f(p)$, where p denotes the price, is an
a. Increasing function c. decreasing function
b. Fluctuating function d. periodic function
- The supply function $S=f(p)$, where p denotes the price, is an
a. Increasing function c. decreasing function
Fluctuating function d. periodic function
- A break-even point is the stage when
a. Everything breaks down c. the market crashes
b. The demand & supply balances d. none of these
- For the demand function $D=2-3p+p^2$, the demand when the price $p=5$, is
a. 23 b. 35 c. 12 d. 45
- For the supply function $S=p^3 - p + 1$
a. 10 b. 05 c. 17 d. 4
- The break -even point for Dd & Ss functions $D=15+2p-p^2$ &
 $S= p^2-4p+11$, is $p=$
a. 05 b. 35 c. 12 d. 02
- The break-even point of the demand and supply function
 $D=1-2p+p^3$ & $S= p^2+p-1$, is $p=$
a. -3 b. 0 c. 2 d. 20

9. The total cost function of producing certain article is $C = x^2 - 5x + 100$ the average cost of producing 20 such item is..

- a. 10 b. 20 c. 400 d. 520

10. The demand for a certain goods in the market is $D = 10 - p^2$, where p is its price. Its total revenue when the price is Rs.3 per unit is

- a. 3 b. 1 c. 0 d. 100

11. If x is the quantity demanded and the price is $p = 10 + 3x$, then the revenue when $x = 5$ is Rs.

- a. 25 b. 30 c. 125 d. 250

12. For the demand x , the price is $p = 20 + x^2$. If the cost function for x items is $C = 10 - x + x^2$, then the profit when just 1 item is sold is Rs.

- a. 10 b. 11 c. 100 d. 500

13. x is an Variable

- a. Independent b. Dependent c. Unique d. Uniform

14. The quantities which do not change are called

- a. Constants b. Variable c. Function d. height

15. when all the power of x are non-ve, it is called a function.

- a. Polynomial b. Linear c. Quadratic d. Range

16. Profit = Revenue -

- a. Cost b. Constant c. Periodic d. Increasing

17. The quantities which change are called

- a. Variable b. Constant c. Linear d. Decreasing

18. If $y = 5x^2 - 2x + 3$ then d^2y/dx^2 is

- a. $10x - 2$ b. $25x^2 - 4$ c. 10 d. 0

27. At what rate a principle of Rs.4,000 be put for 3 years, so as to get Rs.1320 as interest on maturity?

- a.5% b.11% c.20% d.35%

28. Mr.X invested Rs.120 in a surprise scheme. He returned Rs.180 after a year. What was the rate of simple interest on my investment?

- a.20% b.40% c.50% d.30%

29. A well-known company advertises 'make FD of Rs.50 lacs with us and become crorepati in 5year' if company offers SI ,then their rate of interest is

- a.20% b.25% c.30% d.45%

30. A bank promises to double the principle invested by their customer in 10years . what is the rate of SI on investment?

- a. 8% b.10% c.12% d. 40%

31.The maturity amount of a FD of Rs.1000 kept for 5 years at 10% SI is Rs.

- a. 500 b. 1000 c.1500 d. 2500

32. What is the maturity of a FD worth Rs.2000 kept for 4 years @12% SI?

- a.296 b.2960 c.2480 d.3200

33. . What is the maturity of a FD worth Rs.2000 kept for 4 years @12% SI?

- a. Zero b. Positive c. Negative d. None

34. When $r=1$, all the points on the scatter diagram would lie

- a. On a straight-line
- b. On a straight line directed from lower left to upper right
- c. Both (a) & (b)
- d. None

35. The covariance between the two variables is ..

- a. Positive
- b. Negative
- c. Either Positive, Negative or Zero
- d. none

36. The limits of correlation coefficient are

- a. between -1&1
- b. Between 0 & 1
- c. Between -1 & 1 including both
- d. No limit

37. For finding correlation between two attributes, we consider

- a. Karl Pearson's
- b. Spearman's rank correlation coefficient
- c. Range
- d. None

38. When there is perfect agreement between marks of physics and maths the value of rank correlation is

- a. -1
- b. 1
- c. 0
- d. All

39. Correlation coefficient can have

- a. any unit
- b. Unit free
- c. can be more than one
- d. none

40. When there is absence of correlation then r is equal to

- a. 1
- b. -1
- c. 0
- d. none

41. The method used for deriving regression equation is known as

- a. Product moment b. least squares c. Normal d. All

42. The two-regression equation become identical when

- a. $r=1$ b. $r=-1$ c. both a & b d. none

43. The limit of regression coefficient are

- a. Positive b. Negative c. No limit d. Product of regression coefficient is less than or equal to 1

44. The following are the 2 normal equation obtained for deriving regression line of y on x.

$$3a+5b=34 ; 2a-b=1$$

- a. $5x+y=3$ b. $y=3+5x$ c. $y=5+3x$ d. None

45. When the regression lines are perpendicular to each other if r is equal to

- a. 0 b. 1 c. -1 d. none

46. The correlation of r is of the 2-regression coefficient b_{yx} and b_{xy}

- a. Arithmetic Mean b. Geometric Mean c. Harmonic Mean d. None

47. With respect to time series which of the following is not true

- a. Secular trends is not a component of time series
b. Seasons Trends
c. Time Series
d. None

48. Which of the following is not a time series ?

- a. Annual export b. no. of books c. Series d. none

49. The method of least square is used to determine

- a. Seasonal variation b. Cyclical c. Trend d. Random variable

50. The increase in sale of sweets during Diwali is associated with

a. Seasonal b. Trend c. Random d. None

51. Moving average eliminates

a. Cyclical variation b. Trend c. Random variation d. none

52. The best method of finding trend is using

a. method of least square b. variable c. Components d. none

53. Which of the following is wrong?

Method of moving average is appropriate only when

a. Trend c. We wish to have current analysis & estimate for the future
b. Cyclical Variation d. All

54. Index number of base periods is always

a. 1 b. 0 c. 100 d. 200

55. Index number show ... changes rather than absolute amount of change

a. Relative b. percentage c. both a & b d. None

56. Which of the following use weights for calculating index?

a. Laspeyre's method b. Paasche's method c. Fisher's method d. All

57. For a particular set of data, Laspeyre's is 120 & Paasche's is 125, then its Dorbish-Bowley's is ...

a. 122 b. 122.5 c. 123 d. 123.5

58. For a particular set of data Fishers I given by 255, Paasche's 250 then Laspeyre's is ..

a. 260.1 b. 255.5 c. 265 d. 250.1

59. The cost of Living Index Number is always

a. Weighted Index number b. Price Index c. Value Index d. None

60. The mean & variance of a binomial distribution are

a. np & npq b. npq & pq c. np & nq d. None

61. Which of the following is a continuous probability distribution?

- a. Binomial b. Poisson c. Normal d. None

62. The total area under a standard normal curve is

- a.3 b. 2 c.1 d.0

63. In normal distribution mean, median & mode are

- a. Identical b. Zero c. Non-Zero d. All

64.The normal distribution is

- a. Symmetric b. Skewed to left c. Skewed to Right d. none

65. The mean deviation of a normal distribution whose mean is 50 and standard deviation is 10 is ...

- a.40 b.08 c.06 d. 10

66. The quartile deviation of a normal distribution whose mean is 30 & SD is 9

- a.06 b.20 c. 40 d. 36

67. The Mean & SD of normal distribution of 50 & 6 ,then lower quartile is

- a.46 b. 54 c.60 d. 30

68. The mean & SD of a normal distribution are 60 & 9 ,then upper quartile is

- a.59 b.66 c. 70 d. 25

69. The first & the third quartiles of a normal distribution are 36 & 44,then its mean & SD are

- a.40,6 b.4,40 c.30,6 d. 25,5

70. For a normal distribution, mean is 50 and SD is 15 ,then the inter-quartile range is

- a.10 b.40 c.20 d. 35

71. The normal curve is

- a. bell-shaped b. Skewed c. U-shaped d. None

72. In a certain area 90% of families have income above Rs.10,000/- , 50% have income above Rs.50,000/- , what percentage earn more than Rs.90,000

- a. 10% b. 90% c. 40% d. 55%

73. For a normal distribution first quartile is 46, variance is 144 then the limits of middle 50% of the observation lies between –

- a. 46 & 62 b. 54 & 46 c. 46 & 50 d. None

74. In a group of students ,85% are above 18 years. If 50% of them are above 22 years, what percentage are above 26 years-

- a. 10% b. 15% c. 35% d. 40%

75. In a group of workers ,50% earn Rs.65,000/- , 25% earn more than Rs.90,000/- . what is the maximum salary of the lowest 25% of workers?

- a. 40,000 b. 30,000 c. 25,000 d. 15,000

76. when the interest is compound annually, the maturity amounts of a fixed deposit obtained at the end of one year using the compound interest as well as the SI are identical

- a. True b. False c. Impartial d. None

77. The amount for the ordinary annuity with periodic payment Rs.100 at end of each year, at the rate of interest 12% per annum, for 3 years, when the period of interest is on yearly bases is approximately Rs.

- a. 300 b. 337 c. 500 d. None

78. The amount for the ordinary annuity with periodic payment Rs.300 at the end of each quarter, at the rate of interest 8% p.a. , for 5 years , when the period of interest is on quarterly basis , is

- a.6,000 b. 7289 c.10,000 d. None

79.The amount for the ordinary annuity with periodic payment Rs.500 at the end of each month, at the rate of interest 11% p.a ,for 2 years ,when the period of interest is on monthly, is Rs.

- a.6000 b.13354 c. 25000 d.15000

80.The PV of an annuity of Rs.500, paid at end of each quarter for 1 year at the rate of interest 9% compounded quarterly, is

- a. 1000 b. 1892 c.2000 d.3200

81. The PV of an annuity of Rs.1500 paid at end of each half year for 3 year at the rate of interest 10% compounded half yearly, is

- a.9000 b.15000 c.7613 d.6500

82. The PV of annuity of Rs.1000 paid at end of each month for 2 year at the rate of interest 8% compounded monthly, is

- a. 22110 b.12000 c. 24000 d.15000

83. The PV of an annuity of Rs.200, paid at end of each year for 4 year at the rate of interest 12% compounded yearly, is

- a.800 b.607 c.1100 d. 2300

84. A person borrowed Rs.200 at 12% interest p.a ,If he is supposed to return the money within 2 years , then his EMI using Flat Rate of Interest will be ..

- a.1000 b.300 c. 200 d. 350

85.The maturity of a FD worth Rs. 1000 ,kept for 4 year at 8% p.a ,if the interest is calculated annually ,will be

- a.1360.5 b.1320 c. 3200 d. 4500

86. The maturity value of FD Rs.2000 kept for 8 years in a company at 12% CI, compounded annually is

- a.4951.9 b. 1920 c. 3920 d.2520

87. The compound interest for 2 years on Rs. 100 at the rate of 10% pa., annually is

a.11 b. 100 c.21 d. None

88. After how many years the maturity value of a FD will be nearly doubled at the rate 9.5%, if the interest is too be compounded annually

a.6 Years b.8 Years c.10 d.20

89. The CI for 2 yrs on Rs.100 at the rate of 8%, calculated annually is

a.22.4 b.16.64 c.122.4 d. 132.7

90. The compound interest on two years on Rs.1000 at the rate of 9%, annually calculated is

a. 90 b. 188.1 c. 81 d. 102

91. What is the difference in SI & CI on a sum of Rs.3000 kept at 6% for 2 years, if the interest is to be compounded annually?

a. 10.8 b.36 c.40 d.66

92. The difference between the CI & SI on a principle P, placed at 10% p.a ., compounded annually for 2 years is 50 ,then P principle is

a. 40,000 b. 5,000 c. 30,000 d. 35000

93. The difference between the CI & SI on a principal P placed at 10%p.a., compounded annually for 2years is Rs.50 ,then P is

a. 1,00,000 b. 1,35,000 c. 23,000 d. 55,000

94. A fixed sum kept on compound interest got Rs.900 in the first year and Rs.981 in the next year. Find the rate of interest, when compounded annually.

a. 9% b. 81% c. 80% d. 90%

95.The compound interest earned for two consecutive years, calculated annually, are Rs. 600 & Rs.648. Therefore, the rate of interest is

a. 8% b.10% c.5% d.15%

96.The difference in the CI & SI on a principal of Rs.37500, placed for 2 years is Rs.240. Find the rate of interest, which was compounded annually

a.4% b.20% c. 3% d.5%

97. If the sample space contains exactly two outcomes, it is called a ... Trail

- a. Bernoulli b. Binomial c. Poisson d. Normal

98. EMI stands for Equated Monthly

- a. Interest b. Instalments c. Inference d. Inter

99. A statistical data consisting of two variables is called a Data

- a. Bivariate b. Conversion c. Normal d. Mean

100. A pictorial representation of the correlation is called a ...diagram

- a. Scatter b. Normal c. Binomial c. Trinomial

100. A measure of the strength of the linear relationship that exists between two variables is called: a) Slope b) Intercept c) Correlation coefficient d) Regression equation

101. If the points on the scatter diagram indicate that as one variable increases the other variable tends to decrease the value of r will be ____.

- a) Perfect positive b) Perfect negative c) Negative d) Zero

102. If the sum of square of differences in rank of 10 pairs of observation is 8 then Rank Correlation, R is _____.

- a) 0.56 b) 0.80 c) 0.95 d) 2

103. If $b_{yx} = -0.8$ and $b_{xy} = -0.2$, then r is equal to ____.

- a) -0.2 b) -0.4 c) 0.4 d) -0.8 104.

104. If $b_{yx} = 1.6$ and $b_{xy} = 0.4$, then r will be.

- a) 0.4 b) 0.64 c) 0.8 d) -0.8

105. If the relationship between two variable is given by $2x + 3y + 4 = 0$ then the value of correlation coefficient is _____.

- a) 0 b) 1 c) -1 d) Negative

106. The two regression lines becomes identical when

a) $r = 1$ b) $r = -1$ c) 0 d) Both a and b

107. If the points on the scatter diagram show no tendency either to increase together or decrease together the value of r will be close to ____.

a) -1 b) +1 c) 0.5 d) 0

108. If $y = 8x + 15$ is the regression equation of y on x and if mean of x is 2 then mean of y is ____.

a) 30 b) 31 c) 1 d) Can't obtained

109. The method used for deriving regression equations is called _____.

a) Normal equation b) Product moment c) Least squares d) Regression coefficient

110. If $b_{yx} = -4$ and $b_{xy} = -16$ then correlation is _____.

a) 8 b) 0 c) -8 d) 414

111. A process by which we estimate the value of dependent variable on the basis of one or more independent variables is called:

a) Correlation b) Regression c) Residual d) Slope

112. The slope of the regression line of Y on X is also called the ____.

a) Correlation coefficient of X on Y b) Correlation coefficient of Y on X c) Regression coefficient of X on Y d) Regression coefficient of Y on X

113. In the regression equation $Y = a + bX$, the Y is called _____.

a) Independent variable b) Continuous variable c) Dependent variable d) Qualitative variable

114. In the regression equation $X = a + bY$, the X is called _____.

a) Independent variable b) Dependent variable c) Qualitative variable d) Continuous variable

115. The graph showing the paired points of (X_i, Y_i) is called _____.

a) Scatter diagram b) Histogram c) Pie diagram d) Bar diagram

116. If both variables X and Y increase or decrease simultaneously, then the coefficient of correlation will be _____.

a) Positive b) Negative c) Zero d) One

117. If both the series move in the same direction and the variations are in a fixed proportion, correlation between them is said to be_____.

a) Perfect correlation b) Nonlinear correlation c) Linear correlation d) positive correlation

118. The value of the coefficient of correlation r lies between:

a) 0 and 1 b) -1 and 1 c) -1 and 0 d) -0.5 and 0.5

119. If $b_{xy} = 0.20$ and $r = 0.50$, then b_{yx} is equal to _____.

a) 0.20 b) 0.25 c) 0.50 d) 1.25

120. If $b_{yx} = 1$ and $b_{xy} = 1$ then correlation coefficient, r is _____.

a) 0 b) 1 c) -1 d) 2

121. If $b_{yx} = 2/5$ and the ratio s.d of y/s.d of x is $2/3$ then correlation coefficient, r is _____.

a) $3/2$ b) $3/5$ c) $4/15$ d) $1/2$

122. If $b_{yx} = -1$ and $b_{xy} = -1$ then correlation coefficient, r is _____.

a) 0 b) 1 c) -1 d) 2

123. If s.d of x is 3, correlation coefficient $r = 0.5$ and $b_{yx} = 4/3$, s.d of y is_____.

a) 3 b) 4 c) 8 d) 1.33

124. If the regression equation of y on x is $2x - 5y + 60 = 0$ then regression coefficient of y on x is _____

a) $2/5$ b) $-2/5$ c) $5/2$ d) $-5/2$

125. In the regression equation of Y on X

a) X is independent and Y is dependent. b) Y is independent and X is dependent. c) Both X and Y are independent. d) Both X and Y are dependent

126. In the regression equation of X on Y

a) X is independent and Y is dependent. b) Y is independent and X is dependent. c) Both X and Y are independent. d) Both X and Y are dependent

127. The most commonly used mathematical method for measuring the trend is _____.

a) Moving average b) Semi-average c) Least square d) Free hand curve

128. The total number of components in time series are _____.

a) 4 b) 3 c) 2 d) 5

129. Prosperity, Recession and depression in business is example of _____.

a) Seasonal Trend b) Cyclic Trend c) Irregular Trend d) Secular Trend

130. Increase in death rate due to earth quake is

a) Seasonal Trend b) Cyclic Trend c) Irregular Trend d) Secular Trend

131. In moving average method we cannot find trend values of some _____.

a) Starting period b) Ending period c) Starting and ending period d) Middle period

132. If the straight line trend is $y = 5 + 3x$ then estimate of y when x is 7 is

a) 8 b) 26 c) 21 d) 15

133. If $n = 5$, $\Sigma y = 30$, $\Sigma x^2 = 42$ and $\Sigma xy = 28$, straight line trend is _____.

a) $y = 6 + 28x$ b) $y = 6 + 0.67x$ c) $y = 5 + 0.67x$ d) $y = 5 + 42x$

134. For a given product demand, time series trend line is $y = 25.3 + 2.1x$, what will be the forecast of demand for period 7?

a) 27.4 b) 40 c) 25.3 d) 2717

135. Three yearly moving averages of 5,6,7,9 are

a) 5,6.3 b) 6,7.3 c) 7,7.3 d) 9,7.3

136. The following are the method to determine trend except _____.

a) Moving Averages b) Semi Averages c) Least square d) Correlation

137. Time series means _____.

a) Data is arrange as per ascending order b) Data is arrange as per descending order c) Data is arrange with respect to time d) Data is arrange as per judgment

138. In trend line $y = 2.3 + 1.6x$, Y-intercept is _____.

a) 1.6 b) 3.9 c) 2.3 d) 3.68

139. In trend line $y = 1.6 + 1.3x$, Y-intercept is _____.

a) 1.6 b) 3.9 c) 1.3 d) 3.68

140. If the straight-line trend is $y = 5 + 3x$ then estimate of y when x is 9 is

a) 8 b) 32 c) 21 d) 15

141. The price index numbers measure the general changes in the _____ of goods with reference to a particular period

a) Quantity b) Price c) Value d) Quality

142. The quantity index numbers measure the changes in the _____ of goods produced, consumed, sold or purchased, etc. with reference to the particular time.

a) Quantity b) Price c) Value d) Quality

143. The value index number combines _____ and quantity changes to present a more spatial comparison.

a) Price b) Quality c) Width d) Length

144. Index number of base period is always _____.

a) 0 b) 1 c) 100 d) 200

145. If $I_L = 120$ and $I_p = 125$ then I_{DB} is _____.

a) 122 b) 122.5 c) 123 d) 123.5

146. If $I_L = 120$ and $I_p = 125$ then I_F is _____.

a) 122.51 b) 123.51 c) 123.47 d) 122.47

147. If sum of $p_1 = 58.5$ and sum of $p_0 = 21$ then Index number $I =$ _____
 a) 279.04 b) 270.06 c) 290.54 d) 250.25
148. If sum of $p_1 = 2880$ and sum of $p_0 = 1308$ then Index number $I =$ _____
 a) 259.35 b) 220.18 c) 221.25 d) 225.56
149. If $\sum p_1 q_0 = 154$ and $\sum p_0 q_0 = 100$ then Laspeyre's price Index Number is _____
 a) 154.5454 b) 154.00 c) 154.27 d) 154.2727
150. If $\sum p_1 q_1 = 187$ and $\sum p_0 q_1 = 121$ then Paasche's Index Number price Index Number is _____
 a) 154.5454 b) 154.00 c) 154.27 d) 154.272719
151. If $I_L = 154$ and $I_P = 154.5454$ then Fisher's index number is _____
 a) 154.5454 b) 154.00 c) 154.27 d) 154.2727
152. If $I_L = 147.12$ and $I_P = 147.70$ then Fisher's index number is _____
 a) 147.4 b) 147.41 c) 151.17 d) 147.12
153. If $I_L = 154$ and $I_P = 154.5454$ then Dorbish Bowley index number is _____
 a) 154.2727 b) 154.00 c) 154.27 d) 154.2727
154. If $\sum p_1 w = 5370$ and $\sum p_0 w = 2590$ then Weighted aggregative Index number is _____
 a) 207.335 b) 263.46 c) 250.2 d) 225.25
155. If $\sum i w = 26346.07$ and $\sum w = 100$ then weighted average of price relatives Index number is _____
 a) 207.335 b) 263.46 c) 250.2 d) 225.25
156. If $n = 5$, $\sum y = 30$, $\sum x^2 = 42$ and $\sum xy = 28$, straight line trend is _____.
 a) $y = 6 + 28x$ b) $y = 6 + 0.58x$ c) $y = 5 + 0.67x$ d) $y = 5 + 42x$
157. For a given product demand, time series trend line is $y = 25.3 + 2.1x$, what will be the forecast of demand for period 5?
 a) 27.4 b) 40 c) 35.8 d) 27

158. The mean and variance of Binomial distribution are ____.

a) np and np b) npq and npq c) np and npq d) npq and np

159. Let X follows Binomial distribution with $n=10$ and $p=0.4$, then $E(X)+V(X)=$ _____

a) 4 b) 6.4 c) 2.4 d) 1.6

160. Let $E(X)=6$ and $V(X)=4.2$, then $n+p=$ _____

a) 20.3 b) 20.7 c) 19.3 d) 19.7

161. A fair coin is tossed 8 times, then probability that it shows exactly 5 heads is _____

a) $5/32$ b) $7/32$ c) $9/32$ d) $11/32$

162. A fair coin is tossed 8 times, then probability that it shows heads at least once is _____

a) $1/256$ b) $56/256$ c) $93/256$ d) $255/256$

163. A fair coin is tossed 8 times, then probability that it shows heads more number of times than tails is _____

a) $7/32$ b) $93/256$ c) $255/256$ d) $56/256$

164. If X follows Binomial distribution with $n=10$ and $E(X)=5$, then $Var(X)=$ _____

a) 2 b) 2.5 c) 3 d) 3.5

165. In a Binomial distribution with $n=4$ and $2 \cdot P(X=3) = 3 \cdot P(X=2)$, then value of $p=$ _____

a) $9/13$ b) $4/13$ c) $6/13$ d) $7/13$

166. If mean of a Binomial distribution is 18 and variance is 12, then $n=$ _____

a) 50 b) 52 c) 54 d) 55

167. In a simultaneous toss of four coins, what is probability of getting exactly three heads

a) $1/2$ b) $1/3$ c) $1/4$ d) $1/5$

168. The probability that India wins a cricket test match against England is $1/3$. If India and England play 3 matches, the probability that India will win at least one match is _____

a) $8/27$ b) $19/27$ c) $1/27$ d) $9/27$

169. The probability of getting at least two heads when tossing a coin three times is _____

a) $1/4$ b) $1/3$ c) $1/2$ d) $1/8$

170. The mean of Binomial distribution is 6 and its standard deviation is square root of 2, then the number of trials n is _____

a) 7 b) 8 c) 9 d) 10

171. A Binomial distribution has a mean of 5 and variance 4. The number of trials is _____

a) 10 b) 15 c) 20 d) 25

172. A fair coin is tossed 10 times, probability of getting exactly six heads is _____

a) $105/512$ b) $196/512$ c) $424/512$ d) $106/512$

173. The probability that a bomb will hit a target is 0.8. The probability that out of 10 bombs dropped, exactly 4 will hit the target is _____

a) $10C4 \cdot 34/510$ b) $10C4 \cdot 44/5$

174. In a Poisson distribution, if n is number of trials and p is probability of success, the mean value is given by _____

a) $m = n(p-1)$ b) $m = np^2$ c) $m = p$ d) $m = np$

175. If mean of Poisson distribution is M , then variance is given by _____

a) M^2 b) M c) $M/2$ d) $M(M-1)$

176. If m is a mean of Poisson distribution then $P(X=0)$ is given by _____

a) em b) e - m c) e d) me

177. The mean number of customers arriving at a bank during a 15-minute period is 10. The probability that exactly 2 customers will arrive at the bank during a 15-minute period is ____ (given that $e^{-10}=0.00005$)

a) 0.015 b) 0.001 c) 0.0005 d) 0.0025

178. Given that X has a Poisson distribution with mean 8 and $e^{-8}=0.00033546$, the probability that $X=4$ is _____

a) 0.054 b) 0.055 c) 0.056 d) 0.057

179. The shape of normal curve is _____

a) Bell shaped b) Circular c) Flat d) Spiked

180. Normal distribution is symmetric about _____

a) Variance b) Mean c) Co variance d) Standard deviation

181. For standard normal variate value of mean is _____

a) 0 b) Infinity c) 1 d) Not defined

182. For standard normal variate value of standard deviation is _____

a) 0 b) Infinity c) 1 d) Not defined

183. For Normal distribution mean, median and mode is _____

a) Not equal b) Equal c) Mean < median < mode d) Mean > median > mode

184. In standard normal distribution, the value of mode is _____

a) 1 b) 0 c) Infinity d) Not defined

185. In standard normal distribution, the value of median is _____

a) 0 b) 1 c) Infinity d) Not defined

186. The mean = np and variance = npq for _____

a) All distributions b) Poisson distribution c) Binomial distribution d) Normal distribution

187. Let X follows Normal distribution with mean 30 and standard deviation of 4, then $P(X > 37)$ is _____ (where area between 0 and 1.75 is 0.4599)

- a) 0.4599 b) 0.5 c) 0.0401 d) 0.9599

188. Let X follows Normal distribution with mean 30 and standard deviation of 4, then $P(X > 40)$ is _____ (where area between 0 and 2.5 is 0.4938)

- a) 0.4938 b) 0.9938 c) 0.5 d) 0.0062

189. If the money kept at simple interest triples in 25 years, then the rate of interest is,

- a) 8% b) 10% c) 15% d) 5%

190. The maturity amount of a fixed deposit of 1,000 kept for 5 years at 10% simple interest is-----

- a) 500 b) 1000 c) 1.500 d) 550

191. What is the maturity value of a fixed deposit worth 2,000 kept for 4 years at simple interest?

- a) 296 b) 2,960 c) 2,480 d) 2500

192. The simple interest on Rs.20000 for 3 years at 6% rate of interest per annum is,

- a) 3600 b) 360000 c) 10000 d) 40000

193. In how many years a sum of Rs.50000 will amount to Rs.60000 at 10% simple interest?

- a) 1 b) 2 c) 3 d) 4

194. Find the simple interest on Rs 25000 at 8% p.a. for 5 years.

- a) 40000 b) 15625 c) 10000 d) 1000000

195. If the simple interest is Rs.4000 on Rs.20000 then amount is,

- a) 16000 b) 24000 c) 20000 d) 4000

196. If principal Rs.10000 becomes Rs.15000 then the simple interest is,

- a) 25000 b) 15000 c) 5000 d) 10000

197. In 2 years a sum will amount to Rs.60000 at 10% simple interest, then the sum is,

a) 60000 b) 50000 c) 10000 d) 5000

198. The formula for accumulated value A is,

a) $A=P(1-r/100)^n$ b) $A=P(1+r/100)^n$ c) $A=nPr/100$ d) $A=P+ C.I.$

199. An amount of Rs.15000 is invested at 8% p.a. for one year, compounded annually. The amount is,

a) 16200 b) 1200 c) 1620 d) 1500

200. The formula of compound interest is,

a) $C.I.=A+P$ b) $C.I.=A-P$ c) $C.I.=A/P$ d) $C.I.=A*P$

201. The maturity value of a fixed deposit worth 2,000 kept for 8 years in a company at 12% compound interest, if the interest is compounded annually is given by,

a) 4951.9 b) 1920 c) 3920 d) 2900

202. After how many years the maturity value of a fixed deposit amount will be nearly doubled at the rate of 9.5%. If the interest is to be compound annually?

a) 6 years b) 10 years c) 8 years d) 5 years

201. The compound interest for 2 years on 100 at the rate of 10% per year, calculated annually is-----

a) 11 b) 100 c) 21 d) 10

204. The compound interest for 2 years on 100 at the rate of 8%, calculated annually is

a) 22.4 b) 16.64 c) 122.4 d) 120.4

205. The compound interest on two years on 1.000 at the rate of 9%, calculated annually is,

a) 90 b) 81 c) 188.1 d) 80

209. Find the future value of Rs. 3000 kept in a bank in a fixed deposit account, after one year at 8% rate compound interest p.a.

a) 3008 b) 3240 c) 240 d) 3375

210. Find the present value of Rs.5000 payable 2 years hence, if the interest is compounded annually at 8%.

a) 5800 b) 4286.69 c) 800 d) 200

211. If the annuities are paid at the end of each period, it is called as an _____

a) Life annuity b) Annuity certain c) Annuity due d) Immediate annuity

212. If the total number of time periods is fixed, it is known as _____

a) Immediate annuity b) Annuity certain c) Annuity due d) Life annuity

213. If the payments are paid at the beginning of each period, it is called as _____

a) Immediate annuity b) Annuity certain c) Annuity due d) Life annuity

214. If the payments are to be made as long as a person is alive, it is called as _____

a) Immediate annuity b) Annuity certain c) Annuity due d) Life annuity

215. If $y = \log x$ then dy/dx is

a) $1/x$ b) 2 c) $1/2x$ d) x

216. If $y = 25 \log x$ then dy/dx is

a) 25 b) $25/x$ c) $25 \log x$ d) $\log x$

217. If $y = 36$ then dy/dx is,

a) 6 b) 0 c) 9 d) 18

218. If $y = ax$ then dy/dx is,

a) ax b) xa c) $a x$ d) $a x \log a$

219. If $y = 10ax$ then dy/dx is,

a) $10ax$ b) $10xa$ c) $10ax$ d) $10 ax \log a$

220. If $y = e^x$ then dy/dx is,

a) xe b) ex c) $e x$ d) e

221. If $y=2e^x$ then dy/dx is,

a) $2xe$ b) $2e^x$ c) $2e^x$ d) $2e$

222. If $y=-6e^x$ then dy/dx is,

a) $-6xe$ b) $-6e^{xx}$ c) $-6e^x$ d) $6e^x$

223. If $y=\sqrt{x}$ then dy/dx is

a) $1/2\sqrt{x}$ b) $1/2x$ c) x d) x^2

224. If $y= u+v$ then dy/dx is

a) $du/dx-dv/dx$ b) $du/dx +dv/dx$ c) $du/dx*dv/dx$ d) dx/dy

225. The demand function is $D = 1 + 4p$. Then the Marginal Revenue at $p=1$ is,

a) 8 b) 9 c) 7 d) 6

226. The demand function is $D = 1 + 4p$. Then the Marginal Revenue at $p=1$ is,

a) 8 b) 9 c) 7 d) 6

227. The cost of manufacturing x toys is $C=5x+7$. What is average cost of manufacturing 10 toys?

a) 57 b) 5.7 c) 35 d) 12

228. The cost of manufacturing x toys is $C=5x+7$. What is marginal cost of manufacturing 10 toys?

a) 5 b) 7 c) 10 d) 12

229. The demand function of a commodity is $p= 3 + 5D - D^2$, where p is its price. What is total revenue of function at $D=5$.

a) 10 b) 15 c) 25 d) 30

230. The maximum value of function $f(x) = 3+4x -x^2$ is a) 7 b) 2 c) 3 d) 1

231. If the Profit Function in lakhs, for selling x tons of goods is $f(x) = x^2 -8x+28$ the minimum profit at $x=2$ in lakhs, is?

a) 13 b) 14 c) 15 d) 16

232. The relation between Marginal Revenue „Average Revenue and elasticity η is,

a) $MR = AR (1 - 1/\eta)$ b) $MR = AR (1 + 1/\eta)$ c) $AR = MR (1 + 1/\eta)$ d) $AR = MR (1 - 1/\eta)$

233. If total cost is $C = x^2 + 2x - 1$ then MC is,

a) $2x + 2$ b) $x + 2 - 1/x$ c) 0 d) $2x - 1$

234. If $y = u - v$ then dy/dx is,

a) $du/dx - dv/dx$ b) $du/dx + dv/dx$ c) $du/dx * dv/dx$ d) $dx/du - dx/dv$

235. If total cost is $C = x^2 + 3x - 3$ then AC is,

a) $2x + 3$ b) $x + 3 - 3/x$ c) $x + 3$ d) $3x - 3$

236. If total cost is $C = x^2 + 3x - 3$ then MC is,

a) $2x + 3$ b) $2x + 3 - 3$ c) $2x$ d) $3x - 3$

237. If total cost is $C = x^2 + 3x - 3$ then MC at $x = 5$ is,

a) 10 b) 37 c) 13 d) 12

238. If total cost is $C = x^2 + 4x - 5$ then MC is,

a) $x + 4$ b) $2x + 4 - 5$ c) $2x + 4$ d) $4x - 5$

239. If total cost is $C = x^2 + 4x - 5$ then MC at $x = 2$ is,

a) 8 b) 7 c) 6 d) 5

240. If marginal cost = $2x + 4$ then MAC is,

a) $x + 4$ b) 4 c) 2 d) 8

241. If marginal cost = $2x + 4$ then MAC at $x = 10$ is,

a) 24 b) 20 c) 60 d) 2

242. If marginal cost = $2x + 3$ then MAC is,

a) $x + 3$ b) 2 c) 3 d) 5

243. If marginal cost = $2x + 3$ then MAC at $x = 5$ is,

a) 13 b) 10 c) 2 d) 5

244. If $y = 2x^4 + 4$ then dy/dx is,

a) $2x+4$ b) $8x$ c) 2 d) $2x$

245. The total revenue received from the sale of x units of an article is given by $R(x) = 3x^2 + 36x + 5$. The marginal revenue when $x = 15$ is,

a) 126 b) 116 c) 96 d) 90

246. If $f'(a) = 0$ and f''

(a) < 0 then f has ----- a) a maximum at $x=a$ b) a minimum at $x=a$ c) a decreasing at $x=a$ d) a increasing at $x=a$

247. If $f'(a) = 0$ and $f''(a) > 0$ then f has -----

a) a maximum at $x=a$ b) A Minimum at $x = a$ c) a decreasing at $x=a$ d) a increasing at $x=a$

248. If x is real, the minimum value of $x^2 - 8x + 17$ is

a) -1 b) 0 c) 1 d) 2

249. Two parts of 50, such that their product is maximum are,

a) 25 & 25 b) 49 & 1 c) 20 & 30 d) 10 & 40

250. The demand function of a commodity is $p=2+4D-D^2$, where p is price. Then Average revenue at $D=2$ is,

a) 6 b) 12 c) 18 d) 24

