CA FOUNDATION

QUANTITATIVE APTITUDE

Test-3 CHAPTERS – 13,14,15,16,17,18

Total Marks: 50

1. Arrange the following dimension wise: Pie-diagram, bar-diagram and cubic diagram.

(a) 1,,2,,3

(b) 3,,1,,2

(c) 3,,2,,1

(d) 2,,2, 3

2. The following data related to the marks of group of students

Marks	No. of Students
More than 70%	7
More than 60%	18
More than 50%	40
More than 40%	60
More than 30%	75
More than 20%	100

How many students have got marks less than 50%?

(a) 60

(b) 82

(c) 40

(d) 53

3. The curve obtained by joining the points, whose X-coordinates are the upper limits of the class-intervals and Y-coordinates are the corresponding cumulative frequencies is called

(a) Ogive

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(b) Histogram

(c) Frequency Polygon

(d) Frequency Curve

4. The intersection of point of less than Ogive and more than Ogive gives

(a) Mean

(b) Mode

(c) Median

(d) None

5. Find the Number of observation between 25.-300 from the following data:

Value	More than	More than	More than	More than
	200	250	300	500
No. of observation	56	38	15	0

(a) 38

(b) 23

(c) 15

(d) None of these

6. Mean of a series is equal to 100, coefficient of variation is 40% then the S.D. is _____

(a) 45

(b) 0.45

(c) 4.5

(d) 40.5

7. Coefficient of mean deviation about mean for the first 9 natural number is:

(a) $\frac{200}{9}$

(b) 80

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(c) $\frac{400}{9}$

(d) 50

8. If the profit of a company remain same for the last ten months then the S.D of profits of the company would be:

(a) Positive

(b) Negative

(c) Zero

(d) (a) or (c)

9. Find the coefficient of mean deviation about mean for the data: 5, 7, 8, 10, 11, 13, 19

(a) 17.28

(b) 28.57

(c) 32.11

(d) 18.56

10. The probable value of mean deviation when $Q_3 = 40$ and $Q_1 = 15$ is _____

(a) 15

(b) 18.75

(c) 17.50

(d) 0

11. If a school has 14 teachers, their heights (in cm) are:

172, 173, 164, 178, 168, 169, 173, 172, 173, 164, 178, 168, 169, 173, then average deviation of this data is

(a) 2.49 approx.

(b) 3.93 approx.

(c) 3.43 approx.

(d) 2.92 approx.

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12. Find the standard deviation and coefficient of variation of 1, 6, 5, 9, 8.

(a) 2.78 and 40.83 respectively

(b) 2.45 and 47.93 respectively

(c) 2.78 and 47.93 respectively

(d) 2.87 and 49.37 respectively

13. Which one of the following is not a method of measures of dispersion?

(a) Standard deviation

(b) Mean Deviation

(c) Range

(d) Concurrent deviation method

14. The mean and variance of a group of 100 observations are 8 and 9, respectively. Out of 100 observations, the mean and standard deviation of 60 observation are 10 and 2, respectively. Find the standard deviation of remaining 40 observations?

(a) 4.5

(b) 3.5

(c) 2.5

(d) 1.5

15. If the quartile is 42.75 and the third quartile is 74.25, then the coefficient of quartile deviation is:

(a) 29.62

(b) 15.75

(c) 17.57

(d) 29.62

16. If a speaks 75% of truth and B speaks 80% of truth. In what percentage both of them likely contradict with each other in narrating the same questions?

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(a) 0.60

(b) 0.45

(c) 0.65

(d) 0.35

17. Thirty balls are serially numbered and placed in a bag. Find chance that the first ball drawn is a multiple of 3 or 5.

(a) 8/15

(b) 1/15

(c) 1/2

(d) 7/15

18. For any two events 'A' and 'B' it is known that P(A) = 2/3, P(B) = 3/8 and P(A ∩ B) = ¼, then the events A and B are:

(a) Mutually exclusive and Independent

(b) Mutually not exclusive and Independent

(c) Mutually exclusive but not independent

(d) Neither independent nor mutually exclusive

19. The probability that a four digit number comprising the digits 2, 5, 6 and 7, without repetition of digits, would be divisible by 4 is :

(a) 1/2

(b) 3/4

(c) 1/4

(d) 1/3

20. If $P(A) = \frac{1}{3}$, If $P(B) = \frac{1}{4}$, $P(A/B) = \frac{1}{6}$, the probability P (B/A)is ;

(a) $\frac{1}{8}$

(b) $\frac{1}{4}$

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(c) $\frac{3}{8}$

(d) $\frac{1}{2}$

21. The binomial distribution with mean 3 & variance 2 is:

(a) $\frac{2}{3}+\frac{1}{4}^{2-9}$

(b) $\frac{2}{6}+\frac{1}{6}^{2-9}$

(c) $\frac{2}{3}+\frac{1}{3}^{9}$

(d) $\left(\frac{2}{5}+\frac{1}{5}\right.^{2-9}$

22. If X~ B (5,p)and p(x=2) = 0.4362 and p (x=3)= 0.2181 then p =

(a) 3/4

(b) 1/3

(c) 2/3

(d) 1/4

23. 5,000 students were appeared in an examination. The mean of marks was 39.5 with standard deviation 12.5 marks. Assuming the distribution to be normal, find the number of students recoded more than 60% marks. [Given when Z = 1.64 area of normal curve = 0.4494]

(a) 1000

(b) 505

(c) 253

(d) 2227

24. For a Poisson variate X, P(X = 2) = 3P (X= 4), then the standard deviation of X is

(a) $\overline{2}$

(b) 3

(c) 4

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(d) 5

25. In normal distribution what is the ratio of QD: MD: SD

(a) 12: 10: 15

(b) 15: 10: 12

(c) 10: 15: 12

(d) 10: 12: 15

26. If X is a Poisson variable and P(x=1) = P (X=2), then P(x = 4) is

(a) $\frac{2}{3}e^{-2}$

(b) $\frac{2}{3}e^{4}$

(c) $\frac{3}{2}e^{-2}$

(d) $\frac{3}{2}e^{4}$

27. For a certain type of mobiles, the length of time between charges of the battery is normally distributed with a mean of 50 hours and a standard deviation of 15 hours. A person owns one of these mobiles and wants to know the probability that the length of time will be between 50 and 70 hours is (Given Ø (1.33) = 0.9082, Ø (0) = 0.5)

(a) -0.4082

(b) 0.5

(c) 0.4082

(d) -0.5

28. The manufacturer of a certain electronic component is certain that 2% of his product is defective. He sells the components in boxes of 120 and guarantees that not more than 2% in any box will be defective.

Find the probability that a box, selected at random would fail to meet t he guarantee? (Given $e^{-2.4} = 0.0907$)

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(a) 0.49

(b) 0.39

(c) 0.37

(d) 0.43

29. A renowned hospital usually admits 200 patients everyday. One percent patients, on an average, require special room facilities. On one particular morning, it was found that only one special room is available. What is the probability that more than 3 patients would require special room facilities?

(a) 0.1428

(b) 0.1732

(c) 0.2235

(d) 0.3450

30. The Standard deviation of a poison variate X is 1.732. The P [-2.9<X<3.54] is

(a) $13\ e^{-3}$

(b) $9\ e^{-3}$

(c) $4\ e^{-2}$

(d) e^{-6}

31. The covariance between two variables X and y is 8.4 and their variables are 25 and 36 respectively. Calculate Kari Pearson's coefficient of correlation between them.

(a) 0.82

(b) 0.28

(c) 0.01

(d) 0.09

32. If r is the karl person's coefficient of correlation in a bivariate distribution the two regression lines are at right angles when _____

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(a) $r = \pm 1$

(b) $r = 0$

(c) $r = \pm \infty$

(d) None

33. When each individual gets the exactly opposite rank by the two judges then the rank correlation will be _____

(a) -1

(b) 0

(c) +1

(d) +1/2

34. The coefficient of determination is defined by the formula

(a) $r^2 = \frac{1-\text{unexplained variance}}{\text{total variance}}$

(b) $r^2 = \frac{\text{explained variance}}{\text{total variance}}$

(c) both (a) and (b)

(d) None

35. Given the following series

X	10	13	12	15	8	15
Y	12	16	18	16	7	18

The rank correlation coefficient R =

(a) $1 - \frac{6\sum d^2 \sum_{i=1}^{2} \frac{m_i(m_i^2-1}{12}}{N(N^2-1)}$

(b) $1 - \frac{6\left[\sum d^2 \sum_{i=1}^{2} \frac{m_i(m_i^2-1}{12}\right.}{N(N^2-1)}$

(c) $1 - 6\sum d^2 + \sum_{i=1}^{2} \frac{\frac{m_i(m_i^2-1}{12}}{N(N^2-1)}$

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(d) $1-6\sum d^2 + \sum_{i=1}^{3} \frac{m_i(m_i^2-1}{12}{N(N^2-1)}$

36. If the equation of the two regression lines are $2x - 3y = 0$ and $4y - 5x = 8$ then the correlation coefficient between x and y is equal to

(a) $\frac{15}{8}$

(b) $\frac{8}{15}$

(c) $\frac{6}{15}$

(d) $\frac{1}{15}$

37. For finding correlation between two qualitative characteristics, we use

(a) Coefficient of rank correlation

(b) Scatter diagram

(c) Coefficient of concurrent deviation

(d) Product moment correlation coefficient

38. The coefficient of rank correlation between the ranking of following 6 Students in two subjects.

Mathematics	3	5	8	4	7	10
Statistics	6	4	9	8	1	2

(a) 0.25

(b) 0.35

(c) 0.38

(d) None

39. Spearman's rank correlation coefficient r_R is given by:

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(a) $1 - \frac{6\sum d_i^2}{n(n^2+1)}$

(b) $1 + \frac{6\sum d_i^2}{n(n^2+1)}$

(c) $1 + \frac{6\sum d_i^2}{n(n^2+1)}$

(d) $1 - \frac{6\sum d_i^2}{n(n^2-1)}$

40. If $Y = 18X + 5$ is the regression line of X on Y: The value of b_{xy} is

(a) 5/18

(b) 18

(c) 5

(d) 1/18

41. Consumer price index is commonly known as

(a) Chain based index

(b) Ideal index

(c) Wholesale price index

(d) Cost of living index.

42. If Laspeyre's index number is 90 and Paasche's Index number is 160 then Fisher's index number will _____.

(a) 144

(b) 120

(c) 125

(d) None of these

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43. What is the formula for calculating the deflated index:

(a) $\frac{\text{Price index of current year}}{\text{Current Value}} \times 100$

(b) $\frac{\text{Current Value}}{\text{Price index of Last year}} \times 100$

(c) $\frac{\text{Current Value}}{\text{Price index of current year}} \times 100$

(d) $\frac{\text{Price index of Last year}}{\text{Current Value}} \times 100$

44. Monthly salary of an employee was Rs. 10,000 in the year 2000 and it was increased to Rs. 20,000 in the year 2013 while the consumer price index number is 240 in year 2013 with the base year 2000, what should be his salary in comparison of consumer price index in year 2013?

(a) 2,000

(b) 16,000

(c) 24,000

(d) None

45. Factor reversal test is

(a) $\frac{\sum p_1 q_1}{\sum p_0 q_0}$

(b) $\frac{\sum p_1 q_1}{\sum p_0 q_0} \times \frac{\sum p_1 q_1}{\sum p_0 q_1}$

(c) $\frac{\sum p_1 q_1}{\sum p_0 q_1}$

(d) $\frac{\sum q_1 p_0}{\sum q_0 p_0} \times \frac{\sum q_1 p_1}{\sum q_0 p_1}$

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46. In the year 2010 the monthly salary was Rs. 24,000. The consumer price index number was 140 in the year 2010 which rises to 224 in the year 2016. If he has to be rightly compensated what additional monthly salary to be paid to him

(a) Rs. 14,400

(b) Rs. 38,400

(c) Rs. 7,200

(d) None of these

47. Fisher's ideal index number is:

(a) The arithmetic mean of Laspeyre's and Paasche's index

(b) The median of Laspeyre's and Paasche's index

(c) The mode of Laspeyre's and Paasche's index

(d) None of these

48. If $\sum P_0Q_0 = 1360$, $\sum P_nQ_0 = 1900$, $\sum P_0Q_n = 1344$, $\sum P_nQ_n = 1880$ then the Laspeyre's index Number is

(a) 0.71

(b) 1.39

(c) 1.75

(d) None of these

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49. Which of the following statement is true?

(a) Paasche's Index Number is based on the base year quantity

(b) Fisher's Index Number is the Arithmetic Mean of Laspeyre's Index Number and Paasche's Index Numbers.

(c) Arithmetic mean is the most appropriate average for constructing the index number

(d) Fisher's index Number is an Ideal Index Number

50. Which is not satisfied by Fisher's Ideal index number?

(a) Factor Reversal Test

(b) Time Reversal Test

(c) Circular Test

(d) None of the above

(50 x 1 = 50 marks)

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