NATIONAL MANAGEMENT COLLEGE, THUDUPATHI.
CA FOUNDATION
PAPER – 3: BUSINESS MATHEMATICS, LOGICAL REASONING AND STATISTICS
50% REVISION TEST 1 (02.05.2022)

Time Allowed : 1 hour **Maximum Marks: 50**

Part A

1) A bag contains 4 red, 3 black and 2 white balls . In how many ways 3 balls can be drawn from this bag so that they include at least one black ball ?

a) 46 b)64 c)86 d) none of these

2)In how many ways can the word 'CHRISTMAS ' be arranged so that the letters C and M are never adjacent ?

a)8! $\left(\frac{7}{2}\right)$ b)9! $\left(\frac{7}{2}\right)$ c)8! $\left(\frac{9}{2}\right)$ d)9! $\left(\frac{9}{2}\right)$

3) how many 3 digit odd numbers can be formed from the digits 5,6,7,8,9 if the digits can be repeated

a)60 b)24 c)75 d)72

4) A.M and G.M of two positive integers a and b (a<b) are respectively 5 and 4; then a and b are

a)6,4 b) 2,8 C) 8,2 D) 4,6

5) There are five roads leading to a town from a village. the number of different ways in which a villager can go to the town and return back is

a) 5 b) 10 c) 20 `d) 25

6)) Find the sum of the series:2+7+12+……297.

a) 8970 b) 8870 c) 7630 d)9875

7) A locker in bank has 3 digit lock. Mahesh forgot his password and was trying all possible combinations. He took 6 seconds for each try. The problem was that each digit can be from 0 to 9. How much time will be needed to by Mahesh to try all the combinations?

a)90 miniutes b) 120 miniutes c) 60 miniutes d) 100 miniutes

8) If ${}^{9}P_{5} + 5 \cdot {}^{9}P_{4} = {}^{10}P_{r}$. then r =

a)2 b) 3 c)5 d)7

9) A sequence is called _____ if $a_{n+1} = a_n + d$

a) Arithmatic progression b) geometric progression
c) harmonic progression d) special progression

10) Find the sum of first twenty-five terms of A.P. series whose n^{th} term $\left(\frac{n}{5} + 2\right)$

a)105 b)115 c)125 d)135

11) If in an A.P ., first term is 20 and 12^{th} term is 120 . find sum upto 12^{th} term,

a)420 b)840 c)140 d)1680

12)If sum of n terms of an A.P., is $n^2 + 5n$ then find general term

a) n+1 b)2n c)3n d) $n^2 + 2n$

13) In a college of 300 students, every student reads 5 newspapers and every newspaper is read by 60 students. The number of newspapers is _____

a)35 b)27 c)25 d)30

14) If A = {1, 2, 3} , B = {1, 4, 6, 9} and R is a relation from A to B defined by 'x is greater than y'. The range of R is

a){1, 4, 6, 9} b){4, 6, 9} c){1} D)None of these

15) Let R be an equivalence relation on a finite set A having n elements. Then the number of ordered pairs in R is

a)Greater than or equal to n b)Less than n

c)Less than or equal to n d)none

16) In a class of 100 students, 55 students have passed in Mathematics and 67 students have passed in Physics. Then the number of students who have passed in Physics only is

a)33 b)45 c)22 d)10

17)if y = $\frac{1}{\sqrt{x}}$ then $\frac{dy}{dx}$ =

a) $\frac{1}{2x\sqrt{x}}$ b) $\frac{-1}{x\sqrt{x}}$ c) $\frac{-1}{2x\sqrt{x}}$ d)none of these

18) If $f'(x) = x - 1$, the equation of a curve Y = f(x) passing through the point (1,0) is given by

a) $y = x^2 - 2x + 1$ b) $\frac{x^2}{2} - x + 1$ c) $\frac{x^2}{2} - x + \frac{1}{2}$ d) none

19) $\int_0^5 \frac{x^2}{x^2+(5-x)^2}$ dx =

a) 1 b)5/2 c)2/5 d)5

20) The cost of C of a product is a function of the quantity x of the product:
$C(x) = x^2 - 400x + 50$. Find the quantity for which the cost is minimum.

a) 1000 b) 1500 c)2000 d) 3000

Part B

21) If wall is called window, window is called door, door is called floor, floor is called roof and roof is called ventilator, what will a person stand on ?

A) Window B) Wall C) Floor D) Roof

22)If "A" means "subtraction", "B" means "division", "C" means "addition" and "D" means "multiplication", then

330 B 6 A 32 C 45 D 12 = ?

A) 525 B) 547 C) 582 D) 563

23)find odd man out 10, 25, 45, 54, 60, 75, 80

a)10 b)45 c)54 d) 80

24) Insert the missing number.

16, 33, 65, 131, 261, (....)

A) 523 B) 521 C) 613 D) 721

25) Find out the wrong number in the given sequence of numbers.

56, 72, 90, 110, 132, 150

A) 72 B) 110 C) 132 D) 150

26) Pointing to Gopi, Nalni says, "I am the daughter of the only son of his grandfather." How Nalni is related to Gopi?

A. Niece B. Daughter C. Sister D. Mother

27) B5D means B is the father of D.

B9D means B is the sister of D.

B4D means B is the brother of D.

B3D means B is the wife of D.

Which of the following means F is the mother of K?

A) F3M5K B) F5M3K C) F9M4N3K D) F3M5N3K

28)Pointing to a photograph Lata says, "He is the son of the only son of my grandfather." How is the man in the photograph related to Lata?

A. Brother B. Uncle C. Cousin D. Data is inadequate

29) A and B are brothers , C and D are sisters. A's son is D's brother. How is B related to C?

a) father b)brother c) uncle d) grandfather

30) If A + B means A is the mother of B; A - B means A is the brother B; A % B means A is the father of B and A x B means A is the sister of B, which of the following shows that P is the maternal uncle of Q?

A) Q - N + M x P B) P + S x N – Q C) P - M + N x Q D) Q - S % P

Part C

31) The difference between upper limit and lower limit of a class is called:

(a) Class interval (b) Class boundaries (c) Mid-value (d) Frequency

32) Histogram is used for finding

(a) Mode (b) Mean (c) First Quartile (d) None

33) Ogive graph is used for finding

(a) Mean (b) Mode (c) Median (d) None

34) A National Institude arranged its students data in accordance with different states. This arrangemnt of data is known as

a) Temperal data b)geographical data c) ordinal data d)cardinal data-

35) A student marks in five subject S1, S2 , S3, S4 and S5 are 86, 79, 90,88 and 89 . If we need to draw a Pie chart to represent these marks, then what will be the Central angle for S3?

a)103.2^0 b) 75^0 c)105.6^0 d)94.8^0

36) Multiple axis line chart is considered when

a) There is more than one time series

b) The units of the variables are different

c) In any case

d)If there are more than one time series and unit of vairables are different

37) If avarage mark for a group of 30 girls is 80, a group of boys is 70 and combined average is 76, then how many are in the boy's group ?

a) 21 b)20 c)22 d) 19

38) If two variables a and b are related by c = ab the G.M of c is equal to

a) G.M of a + G.m of b b) G.m of a × G.M of b

c) G.M of a - G.m of b d)) G.M of a / G.m of b

39) for a moderately skewed distribution, the median is twice the mean , then the mode is _____ times the median

a) 3 b) 2 c) 2/3 d) 3/2

40) The median value of the set of observations 48,36,72,87,19,66,56,91 is

a) 53 b)87 c)61 d) 19

41) SD of first five consecutive natural numbers is

(a)√10 (b) √8 (c) √3 (d) √2

42) Ifσ^2=100 and coefficient of variation = 20% then A.M is

(a) 60 (b) 70 (c) 80 (d) 50

43) The sum of mean and SD of a series is a+b, if we add 2 to each observation of the series then the sum of mean and SD is

(a) a + b + 2 (b) 6 + a + b (c) 4 + a – b (d) a + b + 4

44) Sum of the squares of deviations is minimum when deviations are taken from

(a) Mean (b) Median (c) Mode (d) An arbitrary value

45) P(A) =1 , then the event A is,

a) sure event b) impossible event c) not sure event d) none

46) The chance of getting 7 or 11 in a throw of 2 dice is

(a) 7/9 (b) 5/9 (c) 2/9 (d) None of these

47) If the overall percentage of success in an exam is 60, what is the probability that out of a group of 4 students, at least one has passed?

(a) 0.6525 (b) 0.9744 (c) 0.8704 (d) 0.0256

48) All possible outcomes of a random experiment forms the

a)Exhaustive Events b) Sample space c) Both d) None

49) A bag contains 3 red marbles and 4 blue marbles. Two marbles are drawn at random without replacement. If the first marble drawn is red, what is the probability the second marble is blue?

a)3/7 b) 1/2 c) 4/7 d) 2/3

50) If P(A)=5/9, then the odds against the event A is

a) 4:5 b) 5:9 c) 4:9 d) 5:4