BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Computer Applications
Course Name – Mathematics-II
Course Code - BCA204
(Semester II)

Time allotted : 1 Hrs.25 Min. **Full Marks : 70**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 70=70

Choose the correct alternative from the following :

(1) The mode of the observations 2,1,1,2,3,5,2,1,2,6,4,4,21,3 is

a) 3 b) 4

c) 2 d) 1

(2) You asked five of your classmates about their height. On the basis of this information, you stated that the average height of all students in your university or college is 67 inches. Thi s is an example of:

a) Descriptive statistics b) Inferential Statistics

c) Parameter d) Population

(3) Every vertex of a null graph is

a) Pendant b) Isolated

c) Odd d) none of these

(4) An edge whose two end vertices coincide is called

a) ring b) adjacent edge

c) loop d) none

(5) The degree of an isolated vertex is

a) 0 b) 1

c) 2 d) 3

(6) A complete graph must be a

a) circuit b) regular graph

c) non-simple graph
d) null-graph

(7) The degree of the common vertex of two edges in series is

a) 0
b) 1
c) 2
d) 3

(8) A self-loop cannot be included in a

a) walk
b) circuit
c) trail
d) path

(9) A minimally connected graph cannot have a cycle

a) cycle
b) component
c) even vertex
d) pendant vertex

(10) Each vertex (except one) of a binary tree has degree

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

(11) A tree always is a

a) self-complement graph
b) Euler graph
c) simple graph
d) Hamiltonian graph

(12) Dijkstra's algorithm is used to

a) find maximum flow in a network
b) to scan all vertices of a graph
c) find the shortest path from a specified vertex to another
d) none of these

(13) The minimum number of pendant vertices in a tree with five vertices is

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

(14) A connected graph with 150 vertices and 149 edges is

a) Not a minimally connected graph
b) Euler graph
c) Binary tree
d) Tree

(15) Minimal spanning tree is found by

a) Dijkstra's algorithm
b) Ford-Fukerson's algorithm
c) Floyd algorithm
d) Kruskal's algorithm

(16) A graph with no circuit and no parallel edges is called

a) Multi graph
b) Pseudo graph
c) Simple graph
d) None of these

(17) Number of edges in a complete graph with n-vertices is:

a) ${}^{n}C_{1}$
b) ${}^{n}C_{2}$
c) ${}^{n}C_{3}$
d) ${}^{n}C_{n}$

(18) A minimally connected graph is a

a) Binary tree
b) Hamiltonian graph

c) Tree
d) Regular graph

(19) The chromatic number of a graph containing a circuit of length 11 is

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

(20) Kuratowski's graph is a

a) Planar graph
b) Regular graph
c) Tree
d) None of these

(21) _____ use the division of a circle into different sectors

a) Polygon
b) Line graph
c) Sector Graph
d) Conversion graph

(22) The average value of the lower and upper limit of a class is called

a) Class Frequency
b) Class Boundary
c) Class Interval
d) Mid-Point

(23) A frequency curve touches x-axis

a) Yes
b) Never
c) Sometimes
d) cannot say

(24) Frequency curve is

a) Asymptotic to y-axis
b) Non-Asymptotic to y-axis
c) Asymptotic x-axis
d) None of these

(25) In a Pie calculate the angles for each sectors by the following formula

a) $\frac{component\ Part}{Total} \times 100$

b) $\frac{component\ Part}{Total} \times 360^{\circ}$

c) $\frac{component\ Part}{Total} \times \pi$

d) None of these

(26) Which of the following is not based on all the observations?

a) Mean
b) Median
c) Mode
d) None of these

(27) The relations between mean, median & Mode is

a) Mode=3 Median-2 Mean
b) Mode=3 Median+2 Mean
c) Mode= 2 Median-3 Mean
d) Mode= 2Median+3 Mean

(28) The mean of 7, x-2, 10, x+3 is 9. The value of x

a) 0
b) 9
c) 18
d) 2x+18

(29) The value that has half of the observations above it and half the observations below it is called the

a) Range
b) Median
c) Mean
d) Mode

(30)

If for a random variable X , $Var(X)=1$, then Va

a) 1
b) 2
c) 4
d) None of these

(31) The A.M of 2,4,6,……2n is

a) n+1
b) n(n+1)
c) (n+1)/2
d) n(n+1)/2

(32)

Let X and Y be two random variables such that $Y=$ constants . Then $Var(Y)$ is

a) $b^2Var(X)$
b) $Var(X)$
c) $a^2Var(X)$
d) $\left(b/a\right)Var(X)$

(33) The median of the scores of 9 students 9,8,4,6,7,4,11,13,10 is

a) 9
b) 8
c) 8.5
d) None of these

(34) The standard deviation of the observations 5,1,7,2,6,3 is

a) 4.66
b) 2.16
c) 1.47
d) None of these

(35) The mode of the frequency distribution given below is

x	2	4	6	8
f	29	23	30	27

a) 2
b) 3
c) 6
d) 8

(36) If the A.M 2,6,x,5,7 be 4, then the value of x is

a) 0
b) 4
c) 5
d) 12

(37) If var(x)=5 and y=5x+6 then var(y) is equal to

a) 125
b) 150
c) 5
d) 6

(38) Largest value is 60 and smallest value is 40 and number of classes desired is 5 then class i nterval is

a) 20
b) 4
c) 25
d) 15

(39) Subset of selected population is called

a) descriptive portion
b) elementary portion

c) inferential portion
d) sample

(40) Subset of selected population is called

a) descriptive portion
b) elementary portion
c) inferential portion
d) sample

(41)

The following data show the number of hours worl

Hours	Number of Students
0 - 9	40
10 - 19	50
20 - 29	70
30 - 39	40

The number of students working 19 hours or less is

a) 40
b) 50
c) 90
d) cannot be determined without the original dat a

(42) Questionnaire survey method is used to collect

a) Secondary data
b) Qualitative variable
c) Primary data
d) None of these

(43) The weights of students in a college/ school is a

a) Discrete Variable
b) continuous variable
c) Qualitative variable
d) None of these

(44) The grouped data is also called

a) Raw Data
b) Primary Data
c) Secondary data
d) Qualitative data

(45) A constant variable can take values

a) Zero
b) Fixed

c) not-fixed
d) nothing

(46) Which of these represent qualitative data?

a) Height of a student
b) Liking or disliking of (500) persons of a product
c) The income of a government servant in a city
d) Yield from a wheat plot

(47) The first hand and unorganized form of data is called

a) Secondary data
b) Primary Data
c) Organized Data
d) None of these

(48) Dividing the upper and lower limits of a particular class we get

a) Class Interval
b) Class Frequency
c) Class Boundary
d) Class Mark

(49) Total Relative Frequency is always

a) One
b) Half
c) TWO
d) None of these

(50) The graph of the normal distribution depends on

a) Mean and Standard Deviation
b) Harmonic Mean and Standard Deviation
c) Harmonic Mean
d) Standard Deviation Only

(51) The graph of frequency distribution is called

a) Polygon
b) Cumulative frequency polygon
c) Ogive
d) Histogram

(52) While constructing Frequency Distribution, the number of classes used depends upon

a) Number of Observation
b) Size of Class
c) Range of Data
d) None of These

(53) A frequency polygon is a close figure of

a) Two sided
b) Three Sided
c) Many sided
d) None of these

(54) A frequency curve touches x-axis

a) Yes
b) Never
c) Sometimes
d) cannot say

(55) In a histogram the area of each rectangle is proportional to

a) the class mark of the corresponding class interval
b) the class size of the corresponding class interval
c) frequency of the corresponding class interval
d) None of these

(56) A dice is thrown then the probability of obtaining a ‘six’ is

a) 1/6
b) 1/3
c) 1/2
d) None of these

(57) Three coins are tossed at random. Then the probability that there will be at least one head

is

a) 3/8
b) 7/8
c) 8/9
d) None

(58) One card is drawn from a pack of 52 cards. The probability which is either king or queen is

a) 1/13
b) 3/13
c) 2/13
d) 4/13

(59) The probability of getting at least one of the following events, point 'six' or 'one' on the t op in rolling of an unbiased die once is

a) 1/6
b) 1/9
c) 1/3
d) 2/3

(60) A bag contains five red and four black balls. Two balls are drawn at random. The probabi lity that they match is

a) 2/9
b) 4/9
c) 1/9
d) 1/3

(61)

The probability that A passes a test is $\frac{2}{3}$ and the pr

probability that one of them passes is

a) 4/5
b) 7/15
c) 3/5
d) 8/15

(62) Two perfect coins are tossed simultaneously, the probability of getting at least one head is

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

(63) A bag contains seven black, four white and three red balls. The probability of drawing re d or black ball is

a) 4/9
b) 1/3
c) 5/9
d) 2/3

(64) A card is drawn at random from a well-shuffled pack of cards. The probability that it is h eart or queen is

a) 4/13
b) 3/13
c) 5/13
d) 2/13

(65) Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is multiple of 3 or 5?

a) 7/20
b) 8/20
c) 1/20
d) 9/20

(66) In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What i s the probability that it is neither red nor green?

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

(67) What is the probability of getting a sum 9 from two throws of a dice?

a) 1/3
b) 1/9
c) 2/9
d) 6/9

(68) In a class there are 15 boys and 10 girls. Three students are selected at random. The probability that 1 girl and 2 boys are selected is

a) 21/46
b) 22/46
c) 23/26
d) 1/46

(69) Two dice are tossed. The probability that the total score is a prime is

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

(70) A bag contain 4 white, 5 red and 6 blue balls. The balls are drawn at random from the bag. The probability that all of them are red is

a) 4/26
b) 2/91
c) 2/26
d) Not enough information