Roll No.												

PRESIDENCY UNIVERSITY
BENGALURU

End - Term Examinations – MAY 2025

Date: 24-05-2025 **Time:** 01:00 pm –04:00 pm

School: SOC	**Program:** B.Com CA (Foundation)	
Course Code : COM1030	**Course Name:** Quantitative Techniques	
Semester: II	**Max Marks**: 100	**Weightage**:50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**20**	**20**	**20**	**20**	**20**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 1 marks. 100Q x 1M=100M

1. The Primary rules that should be observed in classification

As far as possible the class should be of equal width

The Classes should be exhaustive

The Classes should be unambiguously defined.

Then which of the following is correct

(a) Only (i) and (ii) (b) Only (ii) and (iii)

(c) Only (i) and (iii) (d) all (i), (ii) and (iii)

2. If for a symmetrical distribution $Q_1 = 20$ and $Q_3 = 30$, find the median.

(a) 20 (b) 25 (c) 30 (d) 15

3. Which of the following companies show high variation in stock prices if range is used for analysis?

Company 'a'	12	34	45	23	34	56	34	23
Company 'b'	23	45	56	23	23	78	45	23

(a) a (b) b (c) Both (a) and (b) (d) None

4. Statistics deals with –

(a) Independent data (b) Quantitative data

(c) Qualitative data (d) Both (b) and (c)

5. The best method to collect data in case of a natural calamity is

(a) Personal interview (b) Indirect interview

(c) Questionnaire method (d) Direct Observation method

6. Half of the numbers in an ordered set have values less than the _____and half will have values greater than the ___.

(a) mean, median (b)median, median (c) mode, mean (d) none.

7. Find out the coefficient of range of the following data:

Height	No. of Students
60-70	8
70-80	20
80-90	30
90-100	18
100-110	5

(a) 0.33 (b) 0.29 (c) 0.22 (d) 0.78

8. If the mean of frequency distribution is 100 and coefficient of variation is 45% then standard deviation is _

(a) 45 (b) 0.45 (c) 0.045 (d) none

9. Neha obtained 66, 95, and 85 marks respectively in three CA Foundation Mock test and 90 marks in the Olympiad Test. The three Mock test are of equal weightage whereas the Olympiad Test is weighted twice as much as a Mock Test. Her mean marks is:

(a) 82.25 (b) 85.2 (c) 80.2 (d) None of these

10. Mean deviation takes its minimum value, when deviation is taken from

(a) mean (b) mode (c) median (d) geometric mean

11. Quartile deviation = Probable error of Standard deviation.

(a) true (b) false (c) both (d) none

12. Tally marks determines

(a) class width (b) class boundary (c) class limit (d) class frequency

13. For determining the class frequencies it is necessary that these classes are

(a) mutually exclusive (b) not mutually exclusive

(c) independent (d) none

14.	If the A.M. and H.M. of 2 numbers are 6 and 4, respectively, then the G.M. is (a) √23 (b) √24 (c) √25 (d) √26
15.	What is the Coefficient of range for the following wages of 7 workers Rs. 650, Rs. 900, Rs. 600, Rs. 750, Rs. 700, Rs. 720, Rs. 850 (a) 30 (b) 20 (c) 40 (d) 60
16.	The variance of first ten natural number is -10. (a) False (b) True (c) (a) or (b) (d) none of these
17.	If the relationship between two variables u and v is given by equation $2u + 1/5v = 10$ and the mode of the variable u is 10, then find the mode of v? (a) -20 (b) 10 (c) -50 (d) None of the above
18.	Calculate the mean deviation about the mean for the following data and find its coefficient: 10, 12, 14, 15, 15, 13, 15, 10, 12, 14 (a) 1.45, 0.1231 (b) 1.6, 0.1231 (c) 1.4, 0.1231 (d) 1.6, 1.231
19.	For 333, 999, 888, 777, 666, 555, 444. Rank of 1st quartile is: (a) 3 (b) 1 (c) 2 (d) 7
20.	There were 200 employees in an office in which 150 were married. Total male employees were 160 out of which 120 were married. What was the number of female unmarried employees? (a) 30 (b) 10 (c) 40 (d) 50
21.	Classes with zero frequencies are called (a) nil class (b) empty class (c) class (d) none
22.	Calculate the harmonic mean for the given set of observations. X: 1/2, 1/3, 1/5, 1/6, 1/9 (a) 5 (b) 1.5 (c) 1 (d) 0.2
23.	Range remains unaffected due to (a) Change of origin (b) Change of scale (c) Both (a) and (b) (d) Neither (a) nor (b)
24.	The average salary of a group of skilled persons is Rs. 10,000 and that of a group of unskilled persons is Rs. 15,000. If the combined salary is Rs. 12,000 then what is the percentage of unskilled persons? (a) 30% (b) 60% (c) 40% (d) 70%
25.	Vertical bar chart may appear somewhat alike (a) Histogram (b) Frequency Polygon (c) Both (d) none
26.	If all the values taken by a variable x is a constant k, then MD is equal to

	(a) 0 (b) 1 (c) ∞ (d) not defined
27.	The S.D is always taken from (a) median (b) mode (c) mean (d) none
28.	For ordering shoes of various sizes for resale, a _____size will be more appropriate. (a) median (b) modal (c) mean (d) none
29.	A pie diagram used to represent the following data_____ <table><tr><td>Source</td><td>Customers</td><td>Excise Tax</td><td>Income Tax</td><td>Wealth Tax</td></tr><tr><td>Revenue</td><td>120</td><td>180</td><td>240</td><td>180</td></tr></table> The central angles corresponding to Income Tax and Wealth Tax (a) 90˚, 120˚ (b) 120˚, 90˚ (c) 60˚, 120˚ (d) 90˚, 60
30.	Mean = 5, S.D = 2.6, Median = 5, Q.D = 1.5, then coeffieciet of Q.D is ? (a) 35 (b) 39 (c) 30 (d) 32 Most of the commonly used frequency curves are (a) Mixed (b) Inverted J-Shaped (c) U-Shaped (d) Bell-Shaped
31.	Rajesh travelled some distance by cycle at a speed of 15 km per hour. On return journey, he travelled the same distance at a speed of 10 km per hour. What was his average speed per hour during the entire journey? (a) 12.5 KmPH (b) 13 KmPH (c) 12 KmPH (d) 15 KmPH
32.	When there are a fixed number of repeated trial of any experiments under identical conditions for which only one of two mutually exclusive outcomes, success or failure can result in each trial then, we use (a) Normal Distribution (b) Binomial Distribution (c) Poisson Distribution (d) None
33.	Standard deviation of binomial distribution is (a) (npq)2 (b) √npq (c) (np)2 (d) √np
34.	In Normal distribution the probability has the maximum value at the (a) mode (b) mean (c) median (d) none
35.	In Binomial Distribution if n is infinitely large, the probability p of occurrence of event' is close to _____ and q is close to _____

	(a) 0, 1 (b) 1, 0 (c) 1, 1 (d) none
36.	In Binomial distribution if mean = 20, S.D.= 4 then q is equal to (a) 2/5 (b) 3/8 (c) 1/5 (d) 4/5
37.	A continuous random variable x follows uniform distribution with probability density function. f(x) = ½, (4 ≤ x ≤ 6). Then P(4 ≤ x ≤ 5) (a) 0.1 (b) 0.5 (c) 0 (d) none
38.	The probability distribution whose frequency function f(x)= 1/n(x = x1, x2, …, xn) is known as (a) Binomial distribution (b) Poisson distribution (c) Uniform distribution (d) Normal distribution
39.	In a discrete random variable x follows uniform distribution and assumes only the values 8 , 9, 11, 15, 18, 20. Then P (x ≤ 15) is (a) 2/3 (b) 1/3 (c) 1 (d) none
40.	In continuous probability distribution P (x ≤ t) means (a) Area under the probability curve to the left of the vertical line at t. (b) Area under the probability curve to the right of the vertical line at t. (c) both (d) none
41.	In Normal distribution as the distance from the _____ increases, the curve comes closer and closer to the horizontal axis. (a) median (b) mean (c) mode (d) All
42.	In Standard Normal distribution (a) mean=1, S.D=0

	(b) mean=1, S.D=1 (c) mean = 0, S.D = 1 (d) mean=0, S.D=0
43.	Probability density function is always (a) greater than 0 (b) greater than equal to 0 (c) less than 0 (d) less than equal to 0
44.	If in Binomial distribution np = 9 and npq = 2. 25 then q is equal to (a) 0.25 (b) 0.75 (c) 1 (d) none
45.	Binomial distribution is symmetrical if (a) p > q (b) p < q (c) p = q (d) none
46.	A random variable x follows Binomial distribution with mean 2 and variance 1.2. Then the value of n is (a) 8 (b) 2 (c) 5 (d) none
47.	In uniform distribution random variable x assumes n values with (a) equal probability (b) unequal probability (c) zero (d) none
48.	In a discrete random variable x follows uniform distribution and assumes only the values 8 , 9, 11, 15, 18, 20. Then P(x = 9) is (a) 2/6 (b) 1/7 (c) 1/5 (d) 1/6
49.	The number of points obtained in a single throw of an unbiased die follows : (a) Binomial distribution (b) Poisson distribution (c) Uniform distribution (d) None
50.	

	For discrete random variables the probability of the entire space is (a) 0 (b) 1 (c) –1 (d) none
51.	In Normal distribution the probability decreases gradually on either side of the mean but never touches the axis. (a) True (b) false (c) both (d) none
52.	An example of a parameter is (a) sample mean (b) population mean (c) binomial distribution (d) sample size.
53.	Which one is not a condition of Poisson model ? (a) the probability of having success in a small time interval is constant. (b) the probability of having success more than one in a small time interval is very small. (c) the probability of having success in a small interval is independent of time and also of earlier success. (d) the probability of having success in a small time interval (t, t + dt) is kt for a positive constant k.
54.	For a binomial distribution, there may be (a) one mode. (b)two modes (c) Three modes (d) (a) or (b)
55.	For a standard normal distribution, the points of inflexion are given by (a) $\mu - \sigma$ and $\mu + \sigma$ (b) $-\sigma$ and σ (c) -1 and 1 (d) 0 and 1.
56.	The interval ($\mu - 3\sigma$ and $\mu + 3\sigma$) covers (a) 95% area of a normal distribution. (b) 96% area of a normal distribution. (c) 99% area of a normal distribution (d) all but 0.27% area of a normal distribution
57.	If $X \sim P(m)$ and its coefficient of variation is 50, what is the probability that X would assume only non – zero values ? (a) 0.018

	(b) 0.982 (c) 0.989 (d) 0.976
58.	If X and Y are 2 independent normal variables with mean as 10 and 12 and SD as 3 and 4, then (X + Y) is normally distributed with (a) mean = 22 and SD =7 (b) mean = 22 and SD = 25 (c) mean = 22 and SD = 5 (d) mean = 22 and SD = 49
59.	The average weekly food expenditure of a group of families has a normal distribution with mean Rs. 1,800 and standard deviation Rs. 300. What is the probability that out of 5 families belonging to tis group, at least on family has weekly food expenditure is excess of Rs.2,100 ? Given $\phi(1) = 0.84$. (a) 0.418 (b) 0.582 (c) 0.386 (d) 0.614
60.	If it is known that the probability of a missile hitting a target is 1/8, what is the probability that out of 10 missiles fired, at least 2 will hit the target ? (a) 0.4258 (b) 0.3968 (c) 0.5238 (d) 0.3611
61.	If the 1st quartile and mean deviation about median of a normal distribution are 13.25 and 8 respectively, then the mode of the distribution is (a) 20 (b) 10 (c) 15 (d) 12
62.	If x is a binomial variate with parameter 15 and 1/3, what is the value of mode of the distribution ? (a) 5 & 6 (b) 5 (c) 5.50 (d) 6
63.	If X and Y are two independent normal random variables, then the distribution of (X + Y) is (a) normal (b) standard normal (c) T (d) chi – square
64.	When the number of cases favorable to the event A is none then P(A) is equal to (a) 1 (b) 0 (c)1/2 (d) none
65.	Probability of the sample space is

	(a) 0 (b)1/2 (c) 1 (d) none
66.	When the event is 'certain' the probability of it is (a) 0 (b) 1/2 (c) 1 (d) none
67.	The classical definition of probability is based on the feasibility at subdividing the possible outcomes of the experiments into (a) mutually exclusive and exhaustive (b) mutually exclusive and equally likely (c) exhaustive and equally likely (d) mutually exclusive, exhaustive and equally likely cases
68.	Probability of occurrence of A as well as B is denoted by (a) P(AB) (b) P(A+B) (c) P(A/B) (d) none
69.	If events A and B are independent, the probability of occurrence of A as well as B is given by (a) P(AB)= P(A/B) (b) P(AB)= P(A)/ P(B) (c) P(AB)= P(A)P(B) (d) None
70.	When a die is tossed, the sample space is (a) S =(1,2,3,4,5) (b) S =(1,2,3,4) (c) S =(1,2,3,4,5,6) (d) none
71.	The expected value of X, the sum of the scores, when two dice are rolled is (a) 9 (b) 8 (c) 6 (d) 7
72.	The odds in favour of one student passing a test are 3:7. The odds against another student passing at are 3:5. The probability that both fail is (a) 7/16 (b) 21/80 (c) 9/80 (d) 3/16
73.	In formula P(B/A), P(A) is (a) greater than zero (b) less than zero (c) equal to zero (d) greater than equal to zero
74.	The probability space in tossing two coins is (a) {(H,H),(H,T),(T,H)} (b) {(H,T),(T,H),(T,T)} (c) {(H,H),(H,T),(T,H), (T,T)} (d) none
75.	The probability of drawing a white ball from a bag containing 3 white and 8 balls is (a) 3/5 (b) 3/11 (c) 8/11 (d) none
76.	A traffic census show that out of 1000 vehicles passing a junction point on a highway 600 turned to the right. The probability of an automobile turning the right is (a) 2/5 (b) 3/5 (c) 4/5 (d) none
77.	Three coins are tossed together. The probability of getting three tails is (a) 5/8 (b) 3/8 (c) 1/8 (d) none
78.	If P(A) = 3/8, P(B) = 1/3 and P(AB) =1/4 then P(A + B)is (a) 13/24 (b) 11/24 (c) 17/24 (d) none
79.	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
80.	A man can kill a bird once in three shots. The probabilities that a bird is not killed is

	(a) 1/3 (b) 2/3 (c) 1 (d) 0
81.	The Probability of the occurrence of a number greater then 2 in a throw of a die if it is known that only even numbers can occur is (a) 1/3 (b) 1/2 (c) 2/3 (d) none
82.	In a class 40 % students read Mathematics, 25 % Biology and 15 % both Mathematics and Biology. One student is select at random. The probability that he reads Biology if he reads Mathematics (a) 7/8 (b) 1/8 (c) 3/8 (d) none
83.	A player has 7 cards in hand of which 5 are red and of these five 2 are kings. A card is drawn at random. The probability that it is a king, it being known that it is red is (a) 2/5 (b) 3/5 (c) 4/5 (d) none
84.	Probability of throwing an odd no with an ordinary six faced die is (a) 1/2 (b) 1 (c) –1/2 (d) 0
85.	If P (A)= 7/8 then P(AC) is equal to (a) 1 (b) 0 (c) 7/8 (d) 1/8
86.	If P (a1) = 0, P(a2) =1/2 , P (a3) = 2/3 then S = {a1, a2, a3} is a probability space (a) true (b) false (c) both (d) none
87.	A bag contain 6 white and 5 black balls. One ball is drawn. The probability that it is white is (a) 5/11 (b) 1 (c) 6/11 (d) 1/11
88.	Probability of occurrence of at least one of the events A and B is denoted by (a) P(AB) (b) P(A+B) (c) P(A/B) (d) none
89.	The terms “chance” and probability are synonymous (a) True (b) false (c) both (d) none
90.	The conditional probability of an event B on the assumption that another event A has actually occurred is given by (a) P(B/A)= P(AB)/P(A) (b) P(A/B)= P(AB)/ P(B) (c) P(B/A)= P(AB) (d) P(A/B)= P(AB)/ P(A)P(B)
91.	When X is a continues function f(x)is called (a) probability mass function (b) probability density function (c) both (d) none
92.	The probability of winning of a person is 6/11 and at a result he gets Rs.77/-. The expectation of this person is (a) Rs. 35/- (b) Rs. 42/- (c) Rs. 58/- (d) none
93.	Which of the following pairs of events are mutually exclusive ? (a) A : The student reads in a school. B : He studies Philosophy. (b) A : Raju was born in India. B : He is a fine Engineer. (c) A : Ruma is 16 years old B : She is a good singer. (d) A : Peter is under 15 years of age. B : Peter is a voter of Kolkata.
94.	If P (A ∩ B) = 0, then the two events A and B are (a) Mutually exclusive (b) Exhaustive (c) Equally likely (d) Independent.
95.	If P(A/B) = P(A), then

	(a) A is independent of B (b) B is independent of A (c) B is dependent of A (d) Both (a) and (b)
96.	If a coin is tossed twice, then the events 'occurrence of one head', 'occurrence of 2 heads' and 'occurrence of no head' are (a) Independent (b) Equally likely (c) Not equally likely (d) Both (a) & (b).
97.	If A, B and C are mutually exclusive and exhaustive events, then P(A) + P(B) +P(C) equals to (a) 1/3 (b) 1 (c) 0 (d) any value between 0 and 1.
98.	It is given that a family of 2 children has a girl, what is the probability that the other child is also a girl ? (a) 0.50 (b) 0.75 (c) 1/3 (d) 2/3
99.	Probability of getting a head when two unbiased coins are tossed simultaneously is (a) 0.25 (b) 0.50 (c) 0.20 (d) 0.75
100.	There are 10 balls numbered from 1 to 10 in a box. If one of them is selected at random, what is the probability that the number printed on the ball would be an odd number greater that 4 ? (a) 0.50 (b) 0.40 (c) 0.60 (d) 0.30