Pimpri Chinchwad Education Trust's

Pimpri Chinchwad College of Engineering (PCCoE)

(An Autonomous Institute)

Affiliated to Savitribai Phule Pune University(SPPU)

FA-I Question Bank

Dept: AS & H | A.Y. 2024-25 (Sem-II) | Date: 18/02/2025

Unit: I & II | Div. All | Branch: Comp./IT

Course Name & Code: Computational Techniques (BSH24OE07) | Max. Marks: 20

1 Marks Questions

1	For a given distribution, if value of $cov(x,y) = -5.2, \sigma_x = 2.82$ then the value of regression coefficient b_{yx} *is* A. -0.55 B. -0.85 C. -0.75 D. -0.65	
2	If $\sum xy = 2638$, $\bar{x} = 14, \bar{y} = 17, n = 10$ then $\text{cov}(x,y)$ is … A)24.2 B)25.8 C)23.9 D) 20.5	
3	The equations of lines of regression are, $6x + 2y = 3,\ x + 4y = 1$ then value of regression coefficients are, A. $b_{xy} = 0.25,\ b_{yx} = 0.5$ B. $b_{xy} = 0.3,\ b_{yx} = 0.2$ C. $b_{xy} = 0.5,\ b_{yx} = 0.25$ D. $b_{xy} = 0.5,\ b_{yx} = 0.25$	
4	The regression lines are $3x+2y-26=0$ and $6x+y-31=0$. Then the correlation coefficient between x and y is, A. 0.08335 B. 0.2887 C. 0.2225 D. -0.2887	
5	In a Binomial distribution for n= 4, mean is 2 and variance is 1then $p(r \leq 2)is$, A. 0.531 B. 0.317 C. 0.688 D. 0.259	
6	If A & B are two events such that $P(A) = 0.4, P(A \cup B) = 0.7$ and $P(A \cap B) = 0.2$ then $P(B) = ?$ A. 0.1 B. 0.3 C. 0.7 D. 0.5	
7	25% lights produced by a machine are defective. The mean and standard deviation of defective lights in total of 800 are respectively, A.150 & 200 B. 200 & 150 C. 15 & 20 D. 20 &15	
8	A die is thrown once. Random variable x denotes the digit that appears on top face. Then mathematical expectation of x is A. 7/2 B. 9/2 C. 5/2 D. 1/2	
9	If x is random variable with distribution given below X: 2 | 3 | 4 | 5 P(x): $\frac{5}{k}$ | $\frac{7}{k}$ | $\frac{9}{k}$ | $\frac{11}{k}$ the value of k is --- A. 16 B) 8 C) 48 D) 32	

2 Marks Questions

1	The arithmetic mean of series of 20 items were calculated by a student as 20. But while calculating an item 13 was misread as 30. Find the correct arithmetic mean.	
2	For least square fit of the straight line $y = ax + b$ to the data x: 0, 1, 2 y: -1, 1, 3 Find the values of a and b ?	
3	Fit a linear curve of the type $y = ax + b$ for given data, x: 2, 3, 5, 7 y: 8, 11, 17, 23	
4	The equation of two regression line obtained in a correlation analysis are $4x - 5y + 33 = 0$, $20x - 9y - 107 = 0$ $and\ variance\ of\ y\ is$ 16 . Find variance of x .	
5	In a telephone exchange, the average number of phone calls get wrongly connected per day follows a Poisson's Probability distribution with a mean 3. What is the probability that on a certain day, number of wrongly connected calls is greater than 2?	
6	For a normal distribution mean is 1 and standard deviation is 3. Find $P(-1.43 \leq x \leq 6.19)$. [Given: $A(z = 0.81) = 0.2910,\ A(z = 1.73) = 0.4582$]	
7	Number of road accidents follows a Poission's distribution with mean 5, in a certain month on the highway Find the probability of more than 2 accidents.	
8	In a certain examination test 10000 students appeared in a subject of mathematics. Average marks obtained were 50% with standard deviation 5%. Marks are normally distributed. Find the number of students expected to get more than 60% marks. [for z=2, A=0.4772]	