

VCD 18-3-14 -F.Y.B.Com-Sem-II-Maths&Stats - 60-2IIRS-1800

- Note: 1> All Questions are compulsory & carry equal marks.
 2> Use of simple calculator is allowed.
 3> Figures to right indicate full marks to corresponding sub-question.

Q.1 > Attempt any two of the following

a > For the demand function $D = 70 + 9P - P^3$, Find the demand, when price is 2.
 Also find the price when demand is 70. (6)

b > Differentiate the following w.r.t. X

(i) $y = \frac{(4x^2 - 7x + 5)}{(3x + 1)}$

(ii) $y = x^{-4} + \frac{1}{\sqrt{x}} + 6^x + \log x$ (6)

c > If $Y = 15 + 12x - 3x^2$, Find the value of x for which y is Maximum. (6)

Q.2 > Attempt any two of the following

a > Find the amount & the compound interest on Rs 1,500 for 4 years at 12%
 Calculated on yearly basis. (6)

b > Find the amount of an annuity of Rs 6,000, payable at the end of each quarter
 for 2 years, the interest rate being 8%, compounded quarterly. (6)

c > For the ordinary annuity of Rs 3,000 per month for 1 year at 12% to be
 calculated monthly, find its present value. (6)

Q.3 > Attempt any two of the following

a > Calculate the correlation coefficient between the price & supply from
 the following data & comment. (6)

Price	5	4	3	6	2	10
Supply	8	6	4	9	3	10

b > Find the rank Correlation coefficient for the data given below. (6)

Marks 1	30	40	50	10	40	70
Marks 2	75	32	45	15	20	45

c > For the given bivariate data.
 Find (i) b_{yx}, b_{xy} & r (ii) The equation of the lines of regression
 (iii) find Y when $x = 2.5$ & x when $Y = 1$.

	X	Y
Mean	3	5.5
Variance	1	1.25

$Cov(x, y) = -1$

Q.4 > Attempt any two of the following

a > Obtained the trend values. Also plot the original data & trend values on the same graph. Using four yearly moving average.

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Values	25.2	27.3	28.4	29.7	30.4	32.8	33.4	30.5	30.7	32	36

b > Find the Laspeyre's, Paasche's & Fisher's Index number for the data given below.

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
A	90	10	70	10
B	80	4	30	25
C	70	40	60	90
D	60	30	40	30

c > Find the missing price, if Laspeyre's index number is equal to Paasche's price index number for the given data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	2	5	4	2
B	3	2	-	4

Q.5 > Attempt any two of the following

a > For a binomial distribution, Mean is 5 & standard deviation is 2. Find n & p.

b > For a poisson distribution, If $P(3) = P(4)$, Find λ and hence find $P(5)$
 Where $(e^{-4} = 0.018)$.

c > The quartile Deviation of a normal distribution is 10. It's First quartile is 70.
 Find the mean, Standard deviation & upper quartile.

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