28/3/14
Library MN3ACO

Fy AF
QM-I

MAX MARKS-60 **TIME-2HRS**

Note: 1. Simple calculator is allowed.
2. All questions are compulsory

Q1. Short answer type questions

(a) Write short note on annuity. (2)
(b) Write short note on sinking fund. (2)
(c) Write short note on Primary and Secondary type data. (2)
(d) Write short note on cost of living index number. (2)
(e) Write formula for D_5 and upper quartile. (2)
(f) If $f(x) = ax + 6$, and $f(1) = 11$, find a. (2)
(g) Write any three properties of arithmetic mean. (3)

Q2

(a) A sum of money is invested for two years at a certain rate. If it had been invested at a rate 2% higher than the present rate, it would have given Rs. 1,300 more as simple interest. Find the sum. (5)

(b) A sum of Rs. 50,000 is invested in a fixed deposit giving 7% p.a. compound interest.Find the interest in the 3rd year. (5)

(c) If the mean of the following distribution is 23, find the missing frequency. (5)

Weight	0-10	10-20	20-30	30-40	40-50
No. of children	16	---	18	14	10

OR

(a) A man purchases a house and take a mortgage on it for Rs. 10, 00,000 to be paid off in 4 years by equal annual payments payable at the end of each year. If the interest rate is 6% p.a., find the sum of money that he will pay each year. (5)

(b) A function is given as : (5)

$F(x) = 3x + 5$, for $-3 \leq x < -1$
$= 2x + 1$, for $-1 \leq x < 2$
$= 2 - x$, for $2 \leq x \leq 4$

Find f (-2), f (-1), f (2), f (3) and f (1)

(c) For a firm producing dolls, the fixed cost is Rs. 50,000 a month and the variable cost is Rs. 100 per doll. Find the equation of total cost in terms of the number of dolls produced. Hence estimate the total cost when 300 doll are manufactured in a month.(5)

MN3ACO

Q3

(a) Draw a pie chart for the given data: (5)

Source	Area in milliom hectares
Govt. canals	15.7
Tanks	3.8
Wells and tubewells	19.5
Others	2.9

(b) Given that the median sales of shops were Rs. 2,400, find the missing frequency. (5)

Sales in hundred of Rs.	0-10	10-20	20-30	30-40	40-50
No. of shops	5	25	---------	18	7

(c) The coefficient of Q.D. for a certain group of observations is 0.4. The sum of two quartiles is 150. Find the values of two quartiles. (5)

OR

(a) Two groups combined together had 250 items. The mean and variance of these items are 51 and 130 respectively. If the first group had 100 items and their mean and standard deviations were 45 and 7 respectively, find the mean and standard deviation of the second group. (5)

(b) Construct an index number for the following data. (5)

Commodities	Current year price in Rs.	Base year price in Rs.	Weight
A	5.20	4.25	30
B	3.75	2.95	40
C	1.95	2.15	15
D	8.10	8.85	15

(c) A garment factory is planning to produce a new range of shirts. It involves a fixed cost of Rs. 1.5 lakhs and a variable cost of Rs.150 per shirt. If each shirt can be sold at Rs.350, find the break-even point. (5)

Q4

(a) On what sum of money will the difference between the compound interest and simple interest for 2 years at 8% p.a. be Rs. 384? (5)

(b) Calculate the standard deviation for the given data: (5)

No. of defects	5	6	7	8	9	10
No.of units	8	10	15	10	5	2

(C) Find the quartile deviation and coefficient of quartile deviation for the following data: (5)

Class interval	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	1	6	3	10	2	2	6

OR

(a) If in the following data laspeyer's index number and paasche's index number are equal, find the value of x. (5)

Commodity	Price		Quantity	
	Base year	Current year	Base year	Current year
A	4	6	6	5
B	6	X	4	4

(b) Find the simple interest from 14th November 2006 to 10 th march, 2007on Rs.50, 000 at 10% p.a. (2)

(c) A loan of Rs. 1, 00,000 is to be returned in 4 equal monthly instalments at 12% p.a., calculate the EMI using reducing balance method and make the amortization table. (8)