Time: 2:30hrs   Max.Marks:75

Instructions:

    (1) All questions are compulsory.
    (2) Each question carries the same marks.
    (3) Only simple calculators are allowed.

Q1 (A) Attempt any seven sub-questions out of ten.   (7)

(a)Write the formula of combined mean for three groups.
(b) Find mode: 39, 42,40,46,38,68,46,34,35,46.
(c)Write the formula of semi-interquartile range.
(d) Q_3 also called as_____.
(e)$Q_3=P_{75}$, (TRUE/FALSE)
(f)Write the formula for C.I. for quarterly compounding.
(g)Write the formula of S.D. for continuous data.
(h) A function is given as $f(x)=5x^2-3$, find the value at x=0.
(i)Write the formula of total revenue function.
(j)At equilibrium point supply will be equal to demand.(TRUE/FALSE)

Q1 (B) Attempt any eight sub-questions out of ten.   (8)
(a)Write the formula of $P_{01}(F)$.
(b) Find A.M. if $\sum fx=1480$, $\sum f=20$.
(c)Write the formula of P_{90}, in continuous data.
(d) At break-even point profit will be equal to_____.
(e) Find R: 48,58,60,90,50,57,67,68.
(f) If the value of C.V. is more, the consistency of data is _____.
(g) If all values of a set of 20 observations are identical then its mean is ____
(h) Write the family budget method to find CLI.
(i) In Immediate annuity payment is made_____.
(j) If r=10%, find the value of i.

Q2 (a) Ketan invested Rs. 200000 in a fixed deposit at 10% p.a., compounded half-yearly, to receive Rs. 243101.24 on maturity. Find number of years he had to invest.   (7)

(b) A manufacturer makes toys and the weekly total cost is given by C= 1200 + 40x.(i) If each toy is sold at Rs 60, find no. of units to be produced and sold for no loss. (ii) If the selling price increases by 20%, find the no. of units to be produced and sold to ensure no loss. (iii) If is it known in advance that the weekly demand for goods will be 90, find selling price of a toy to ensure no loss.   (8)

OR

Q2(a) The accumulated amounts for a certain principal, with compound interest at a certain rate in 2 years and in 4 years are respectively Rs 2662 and Rs 3221.02. Find the principal and the rate of interest.   (7)

(b) Ashutosh purchased Innova car with a down payment of Rs. 90,000 and the remaining amount to be paid 10 equal quarterly instalments. If the company wants to get 12% p.a., find the instalment amount , given that the price of the car is Rs.960000.   (8)

Q3 (a) If the mean for the following data is Rs. 560, find the missing value: (7)

Daily wages in Rs	300-400	400-500	500-600	600-700	700-800	800-900
No. of persons	10	20	40	-	8	6

(b) The budgets of two families are given below. Represent the data by a percentage diagram.   (8)

Item of expenditure	Family A Rs.	Family B Rs.
Food	1600	1200
Rent	800	400
Light& fuel	600	300
Miscellaneous	1000	500

OR

Q3 (a) Find the (i) first and eight decile (ii) nineth and seventy second percentile for the following data: (7)

Commission in Rs.	10-20	20-40	40-60	60-80	80-100	100-120	120-150
No. of salesmen	4	5	7	8	3	2	2

(b) Represent the following data by a subdivided bar diagram. The data represents figures of production of papers in thousand tonnes for the years 2010, 2011, 2012. (8)

Types	2010	2011	2012
Printing and writing	35	40	50
Wrapping	18	19	15
Boards	16	15	15
Special varieties	7	5	5

Q4 (a) For the following data calculate : (i) Weighted Aggregate Index Number (ii) Weighted Index using Arithmetic Mean Rule. (7)

Commodity	Weight	Price	
		Base year	Current year
A	13	5	21.50
B	16	55	79
C	27	43	87
D	44	11	32.50

(b) There are two groups of children having 50 and 70 children respectively. The arithmetic means of weights of the children in the two groups are 30 kgs and 40 kgs with standard deviations 16 kgs and 5 kgs respectively. Find the combined mean and standard deviation of the entire group containing 120 children. (8)

OR

Q4 (a) Find the standard deviation and C.V. for the following data. (7)

Marks	0-20	20-25	25-30	30-35	35-40	40-50
No. of students	16	28	42	30	18	14

(b) From the following data calculate (i) I_L (ii) I_P (iii) I_F (iv) I_{DB} . (8)

Commodity	Base year		Current year	
	Price	Quantity	Price	Quantity
Rice	4	15	5	20
Pulses	8	20	12	30
Sugar	6	25	8	20
Oil	14	10	21	15

Q5 (A) Write a short note on economic functions. (7)

(B) Write short note on basic statistical concepts and methods of collecting primary data. (8)

OR

Q5 Attempt any three out five. (15)

(A) Write in short of census and sample survey.

(B) Write in short on present and future value.

(C) Write in short on Qualitative and Quantitative data.

(D) Write in short on Partition values.

(E) Write short note on immediate annuity and annuity due with formula.