



Instructions

1. All questions are compulsory.
2. Only simple calculators are allowed.
3. Figures to the right indicate full marks.

Q1. (a) Name the following (any 8 out of 10)

(8)

1. Matrix obtained by interchanging rows and columns.
2. The fees levied by a mutual fund scheme on an investor at the time of purchasing the mutual fund.
3. Matrix with determinant equal to zero
4. The value of a share printed on the share certificate or in its initial public offer
5. The selling of units by a unit holder back to the mutual fund scheme or fund manager.
6. The inverse ratio of 4:5 .
7. The long form of NFO
8. 4% of Rs. 1260 is .
9. If annuity is paid at the end of the year
10. A matrix containing single column

(b) Say true or false

(7)

1. If A is 3x4 matrix and B is 4x3 matrix, then order of the matrix AB is 3x4.
2. In compound interest, the principal amount does not change every year.
3. For matrix B , $BB^{-1} = I$, identity matrix
4. Inverse of matrix $C = \frac{Adj(C)}{|C|}$
5. The simple interest for 2 years on Rs. 3000 is Rs.300 then the rate of interest is 6%.
6. In case of mutual funds, entry load is charged as percentage of redemption NAV.
7. Profit is generally calculated on cost price.
8. Loss = Cost price- Net selling price.
9. In case of mutual funds , NAV means National Asset Value
10. A share holder can sell the shares at its face value only.

Q2 (a)

(i) Lalit ,Sujit and Amit started the business with their capitals in the ratio 5:4:3 and after 1 year , total profit of Rs. 84000 was divided in the proportion of their capitals. Find the amount of profit everyone got. (4)

(ii) After giving discount of 20%, a metal table was sold for Rs. 12000 find the marked price of the table. (3)

OP10AEM

(b)

(i) The cost price of an article was Rs. 270 . When it was sold with 25% discount on its marked price, it gave profit of Rs. 30 . Find its marked price. (4)

(ii) A Furniture shop made a table for cost of Rs. 6500 and marked it a Rs. 7200 . It was sold at a 12% discount. Find the profit percentage. (4)

(OR)

Q2 . (p)

(i) A person saves 30% of his income. If his savings are Rs. 8000, find his income. (4)

(ii) If 15% of a certain amount is 20000 , then find the amount. (3)

(q)

(i) A person sold two watches at Rs.240 and this made 10% loss on one and 10% gain on the other. Find his percentage gain or loss. (4)

(ii) The numbers $x-8$, $x-11$, $x+13$ and $x+1$ are in proportion . Find x . (4)

Q 3 (a) Find compound interest and total amount on amount of Rs. 4500 for 3 years with 8% rate of interest **if the interest is** compounded (i) annually (7)
(ii) half-yearly

Also find simple interest on the same amount with the same rate for 7 years.

(ii) Compare two projects T1 and T2 on the basis of NPV .Use 14% p.a. interest Rate . Following are the estimated cash flows from the two projects in the coming five years. Initial investment was Rs.90000 (8)

Year	1	2	3	4	5
Cashflow in Project T1(inRs.)	18000	10000	18000	22000	24000
Cashflow in Project T2(inRs.)	14000	20000	20000	25000	25000

OR

Q3 . (p) Mr. Vyankatesh has taken a loan of Rs.85000 which has to be repaid in 4 equal monthly installments. If the interest rate is 12% p.a. compounded annually , find the EMI using reducing balance method and Flat interest rate method. (7)

- (q) Mr. Atul invested Rs. 8000 as an immediate annuity end of every year (8)
At 7% compound interest for 5 years .What is the accumulated amount he will get at the end of 5 years ? If he would have invested same amount. in another compound interest scheme with 12% interest for 4 years ,what would be the accumulated amount?
What is the difference between the two accumulated amounts?

Q(4)

- (a) Ms. Sunaina invested Rs.50000 in Rs. 100 shares of company A at the rate of Rs.50 per share. She received 10% dividend on these shares. In another investment, she invested Rs. 35000 in Rs.50 shares of company B at Rs. 70 per share . She received 15% dividend Which investment is more profitable? (7)
- (b) Mr. Kantilal invested Rs. 25000 in “ Franklin Templeton Fund - Dividend Plan” in Feb.2009 , when NAV was Rs.25.1214 and redeemed all the units in 2010 when NAV was Rs. 32.2452 . In one year he received dividend at Rs. 10 per unit. The entry load was 2.5% and exit load was 0.5%.Find his total gain and rate of return. (8)

OR

Q(4)

- (p) Ms. Meenakshi purchased 110.1522 units of “ Reliance Infrastructure Fund “ in April 2011 when NAV was Rs.75.2325.She waited for 1 year and redeemed all the units in 2013 when NAV was Rs 80.2356 .The entry load was 2.25% and the exit load was 1% .Find her total gain and rate of return. (7)
- (q) Ms. Singhania had 300 , ten-rupee shares of company X paying dividend of 10% per annum. She sold the shares when market price raised to Rs. 25 per share and invested the received amount in five rupee shares of company Y paying 6.5% dividend per annum , at Rs. 5.50 per share . Compare the two investments. (8)

Q(5)(a) Solve the following equations using Cramer's Rule (7)

$$x + y + z = 2, 8x + y - 2z = 1, 3x + 2y + 2z = 3$$

- (b) (i) If $A = \begin{bmatrix} 3 & 1 & 2 \\ 1 & 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & -1 & -7 \\ 1 & -2 & -3 \end{bmatrix}$ Verify that (4)

$$3A + 3B = 3(A+B)$$

OPIOAEM

(ii) If $C = \begin{bmatrix} -2 & 3 \\ 1 & 3 \end{bmatrix}$, $D = \begin{bmatrix} -3 & 4 \\ 1 & -3 \end{bmatrix}$, Find product CD and DC. (4)

OR

Q5(p) Solve the following equations using Cramers' rule (7)

$$x+3y-z = 3, 2x-y+6z = 7, -x+2y+z = 2$$

(q)(i) Find inverse of matrix $A = \begin{bmatrix} 8 & -7 \\ -4 & -9 \end{bmatrix}$ by adjoint method. (4)

(ii) If $A = \begin{bmatrix} -5 & 4 \\ -2 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 1 & -1 \\ 4 & 2 \end{bmatrix}$, Find X such that, $4A+2B = 3X$ (4)
