

Repeater

XYGAFS(0) Bus. Maths
FYFM (old) 15/10/19

(L)

Time : 2.5 Hrs

Marks : 75

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. The inverse ratio of 14:17.
2. A fixed equated amount paid every month as repayment of the loan.
3. Matrix with diagonal equal to zero
4. The value of a share printed on the share certificate or in its initial public offer.
5. The account where shares are traded electronically.
6. Annuity paid at the end of every year
7. A person who manages all the transactions related to the mutual fund of an investor
8. 4.5% of Rs. 750.
9. A matrix with a single column.
10. The full form of NAV in case of Mutual Funds.

(b) Say true or false (any 7 out of 10)

(7)

1. If P is 2x3 matrix and Q is 3x3 matrix, then order of the matrix PQ is 3x3.
2. In case of shares, brokerage is charged on market value.
3. The ratio 3:4 is reduced form of 12:16
4. For matrix A, $AA^{-1} = I$ (I = Identity matrix)
5. The simple interest for 3 years on Rs. 1000 is Rs.300, then the rate of interest is 3%
6. A matrix with determinant equal to zero is called Singular matrix.
7. Discount means reduction in prices.
8. Profit = Net selling price - Cost price
9. In case of Mutual Funds, Purchase Price = Purchase NAV - Entry Load
10. In case of shares, Commission that is charged on the purchase of the Shares is called as entry load.

Q2 (a)

(i) Ratan, Soham and Balram started a new business with their capitals in the ratio 3:2:4 and after 1 year, total profit of Rs. 9000 was divided in the proportion of their capitals. Find the amount of profit everyone got.

(4)

(ii) Find the fourth proportional of 6, 14 and 30.

(3)

Q2(b)

(i) An article costing Rs.450 is sold for Rs.700. What is percentage loss or Profit? (4)

(ii) A furniture shop made a wooden bed for a cost price of Rs.5000 and its marked price is Rs.7500. It was sold at a 10% discount. Find the profit percentage. (4)

(OR)

Q2. (p)

(i) A person saves 15% of his income. If his savings are Rs.45000, find his Income. (4)

(ii) An article is sold for Rs.3660 at a 20% loss. Find at which it was bought. (3)

(q)

(i) There are 35% officers, 20% clerks and remaining are executives in a bank Find the number of clerks if total employees in the bank are 350 (4)

(ii) The numbers $x+2$, $x+20$, $x-8$ and $x-5$ are in proportion . Find x . (4)

Q 3 (a) Find simple interest and compound interest and total amount on amount of Rs. 6000 for 3 years with 5% rate of interest (7)

(ii) Compare two projects A and B 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.80000 (8)

Year	1	2	3	4	5
Cashflow in Project P1(in Rs.)	2000	1000	1000	3000	2000
Cashflow in Project P2(in Rs.)	2000	2000	1000	5000	2800

OR

Q3 . (p) Mr. Amol has taken a loan of 70000 which has to be repaid in 5 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) Ms. Kranti invested Rs. 8000 as an immediate annuity at end of every Year at 10% compound interest for 5 years .What is the accumulated

amount she will get at the end of years ? If he would have invested same amount in another scheme with 14% interest for 3 years ,what would be the accumulated amount?

What is the difference between the two accumulated amounts? (8)

Q(4)

(a) Ms. Suvarna invested Rs.30000 in Rs. 100 shares of company A at the rate Of Rs. 150 per share. She received 10% dividend on these shares . In Another investment, she invested Rs. 45000 in Rs.50 shares of company B at Rs. 60 per share . She received 15% dividend. Which investment is more profitable? (7)

(b) Mr. AbhiRaj invested Rs. 15000 in “ Kotak Market Plus Fund Dividend Plan” in Feb.2010 , when NAV was Rs.52.32 and redeemed all the units in 2011 when NAV was Rs. 65.34 . 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) (ii) If $C = \begin{bmatrix} 1 & 8 \\ 2 & 1 \end{bmatrix}$, $D = \begin{bmatrix} -3 & -4 \\ 1 & -3 \end{bmatrix}$, Find matrix X such that $6C - 5D + 2X = 0$ (7)

(q) Mr. Abhishek had 400 , ten-rupee shares of company X paying dividend of 15% per annum. He sold the shares when market price raised to Rs. 35 per share and invested the received amount in five rupee shares of company Y paying 8.5% 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

$$x + y + z = 7, x + 2y + 3z = 16, x + 3y + 4z = 22 \quad (8)$$

(b) (i) If $A = \begin{bmatrix} 8 & 1 \\ 1 & -2 \end{bmatrix}$ and $B = \begin{bmatrix} -5 & 3 \\ 1 & -2 \end{bmatrix}$ ~~Find~~ $C = \begin{bmatrix} 1 & 2 \\ 0 & 3 \end{bmatrix}$ (7)

Find $4A + 3B - C$

OR

Q5) Write short notes (Any 3)

15

- 1) Types of matrices
 - 2) Types of Annuities
 - 3) Profit, Loss, percentage loss and profit
 - 4) Methods of calculating EMI
 - 5) Applications of matrices and determinants.
-