Subject: BUSINESS MATHEMATICS   Class: FYBFM

17. 2. 20

[Time: $2\frac{1}{2}$ Hours]   [Marks: 75]

NOTE: i) All questions are compulsory.

ii) In Q.1 , attempt both sections A and B.

iii) Figures to the right indicate marks.

iv) Use of non-programmable calculator is allowed.

Q 1) A. Fill in the blanks with correct alternative. (Attempt any Eight)   **[8]**

i. If 12% of certain amount is Rs. 270, then amount is Rs. _____
(2250, 12400, 1320,1200)

ii. The inverse ratio of 3:7 is _____.
(9:49, 6:14, 7:3, none of these)

iii. The invoice price minus cash discount is called as _____ price.
(list, reduced list, NSP, cost)

iv. Rs. 40000 are invested at 8% p.a. compound interest. The interest in the fourth year is
Rs. _____.
(4312.08, 4000, 4135.22, 4031.08)

v. An annuity whose number of payments depends on the happening of an event is called as
_____ annuity.
(contingent, perpetual, immediate, level)

vi. IPO stands for _____
a. Initial Public Officer
b. Initial Public Offense
c. International Provident Organization
d. Initial Public Offer

vii. An investment plan which allows an investor to invest a fixed sum of money at regular
intervals is called as _____.
(SIP, NAV, FSP, None of these)

viii. The person who finalize the deal between seller and buyer is called as _____.
(broker, agent, dealer)

ix. Cumulative shares are the type of _____ shares.
(preference, equity, ordinary)

x. In annuity, _____ interest is always used.
(simple, compound, both, rate)

Q 1) B. State whether the following statements are True or False. (Attempt any seven)   **[7]**

I. Duplicate ratio is one of the type of compound ratio.

II. Percentage of 3/8 is 37.5%.

III. If an agent charged 8.5% commission on sales and earned Rs. 4794 then the value of sales is
50000.

IV. Simple interest is always greater than compound interest.

V. Level annuity is also known as uniform annuity.

VI. The broker usually charges the brokerage as a percentage of the par value.

VII. The number of units of a mutual fund that can be purchased or redeemed is usually an integer
only.

VIII. Triplicate ratio is same as inverse ratio.

IX. 5% of 600 is 30.

X. NFO stands for New Fund Organization.

Q.2.

    A. A and B are partners sharing profit in the ratio 3:7. They admit a new partner C, giving him $3/13^{th}$ share in total profit. What will be A's and B's share in the total profit? In what ratio will A, B and C share the total profit?

                                                     [8]

    B. After giving a huge 50% discount on a shirt in a sale, it was sold at Rs. 1200, and the seller made 100% profit. Find the list price and cost price of the shirt.

                                                     [7]

<div align="center">OR</div>

    C. A and B are partners in a business with their capitals as Rs. 2,00,000 and Rs. 3,00,000 respectively. C wishes to join the business with a capital of Rs. 3,00,000 at the beginning of a financial year. They agree that goodwill will be taken as twice the average profit for the last 3 years. Last 3 years profits are Rs. 90,000, Rs. 70,000 and Rs. 80,000 respectively. Find the goodwill amount that C would be required to pay A and B respectively.

                                                     [8]

    D. A merchant sold a sari listed at Rs. 6000 giving 10% trade discount on the list price and a further 1% discount on the inverse price for cash payment. Find NSP.

                                                     [7]

Q.3.

    A. A sum of money been invested at simple interest at a certain rate for 4 years. Had it been invested at a rate 2% higher than the present rate, it would have given Rs. 72 more. Find the sum.   **[8]**

    B. Mr. Amol kirkire invested Rs. 6000 at the end of each year at 10% compound interest rate for some years and received Rs. 19860 as an accumulated amount. For how many years did he invest?   **[7]**

<div align="center">OR</div>

    C. A loan of Rs. 1,00,000 is to be repaid in 4 equal installments with the first installment at the end of the first year. Take rate of interest is 10% p.a. Find an installment using reducing balance method and also make amortization table.

                                                     [8]

    D. At what rate per cent per annum compound interest will Rs. 4000 amount to Rs. 6000 in 2 years if the interest is compounded half-yearly?

                                                     [7]

Q.4.

    A. A sum of Rs. 51,102 was invested in 4% stock at 85. After the dividend was received, the stock was sold at Rs. 80. The brokerage was 0.2% on purchase and 0.3% for sale. Find the rate of return on investment.

                                                     [8]

    B. Mr. Soli Udwadia invested Rs. 25,000 in 'J.P. Morgan India Equity Fund' in the N.F.O. on 14th June, 2007 when the NAV was Rs. 10 per unit and the entry load was 2.25%. What was the value of Mr. Udwadia's units on 14th june, 2007?

                                                     [7]

<div align="center">OR</div>

C. Mr. Sudarshan Tilak has instructed and authorized 'HDFC Liquid Fund-Growth' to invest Rs. 1000 for 3 months, on the 10th of each month, starting from October 2007 by transferring Rs. 1000 directly from his bank account. The actual transaction takes place on the first working day after the 10th of each month. Accordingly Rs. 1000 each was invested on 10/10/2007, 12/11/2007 and 10/12/2007 when the NAV was rs. 15.4862, Rs. 15.5919 and Rs. 15.6885 respectively, with no entry load. Find Tilak's average acquisition cost per unit.

[8]

D. Mr. Akshay rane, a broker, bought some shares of face value Rs. 10 at a 50% premium and sold them after a month at a 65% premium. Find his rate of return on investment.

[7]

Q.5.

A. Write short notes on following (Any 3):

[15]

1. Types of load
2. Brokerage with an example
3. Variation
4. Type of Compound ratio
5. Equity shares

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