Subject: BUSINESS MATHEMATICS   **Class: FYBFM**

[Time: $2\frac{1}{2}$ Hours]   A.T.K.T.   15.10.19   [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 by choosing correct option: (Attempt any 8)   [08]

1. If 0.75:x::5:8 then x is equal to _____.
   (1.12, 1.2, 1.25, none of these)
2. The sub-duplicate ratio of 1:64 is _____.
   (64:1, 3:192, 1:16, 1:4)
3. The difference between the market value and the net worth of a business is its
   _____.
   (profit, goodwill, loss, none of these)
4. The cash discount is calculated on _____.
   (NSP, Cost price, invoice price, none of these)
5. In _____ years, Rs 8,000 will amount to Rs. 8,840 at 3.5% p.a.simple
   interest.
   (2, 4, 3, none of these)
6. The present value is always _____ the future value.
   (more than, less than, equal to, independent of)
7. An annuity in which all the payments are equal is called _____.
   (Equitable Annuity, Egalitarian Annuity, Annuity Due, Uniform Annuity)
8. A sinking fund is an example of _____.
   (EMI, Annuity, Simple interest, none of these)
9. The rate of dividend is given for _____.
   (market value, face value, (a) or (b), none of these)
10. The units of a mutual fund must be purchased or redeemed in _____.
    (Whole numbers, Fractions, (a) or (b), none of these)

B. State whether the following statements are true or false. (Attempt any 7)   [07]

1. The fourth proportional to 2, 4 and 8 is 21.
2. The triplicate ratio of 1:2 is 1:8.
3. Trade discount is calculated as % on cost price.
4. A del credere agent is an agent who does not charge any commission from the seller.
5. Present value is just another name for face value.
6. Nominal rate of interest and stated rate of interest are different types of interest.
7. An immediate annuity is same as an ordinary annuity.
8. Annuity calculations usually use simple interest.
9. The trading of shares is done using DMAT accounts through banks.
10. Net assets are calculated as difference between total assets and liabilities of the
    scheme.

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 the total profit. What will be A's and B's new share in the total profit? In what ratio will A, B and C share the total profit?

[8]

B. A merchant gave 10% trade discount and a further 10% cash discount and sold a refrigerator for a net price of Rs. 8100 and still made 62% profit on cost. Find the list price and the merchant's cost price.

[7]

OR

C. After deducting his commission from the sales at 8% on the first Rs. 20000 and at 10% on the sales above Rs 20000, an agent remitted Rs.31900 to his principal. Find the sales value.

[8]

D. If 4 workers can make 3 tables in 6 days, how many days will 8 workers require to make 5 tables?

[7]

Q. 3.

A. The simple and compound interest for two years for the same principal at the same rate is Rs 7200 and Rs 7632 respectively. Find the sum and rate of interest.

[8]

B. How much money should a person invest at 7% p.a. compound interest so that he would get an annuity of Rs. 100000 at the end of each year for next four years after which his principal money will be over?

[7]

OR

C. A loan of rs. 55000 is to be returned in 3 equal monthly instalments at the end of each month, the first instalment being at the end of the first month. The rate of interest is at 12% p.a. compounded monthly. Find the EMI using reducing balance method. Find the breakup of EMI for each month.

[8]

D. The simple interest at 20% p.a. on a certain sum of money for 4 years is Rs. 25600. Find the compound interest on the sum at the same rate for the same period.

[7]

Q.4.

A. Ranvir Rathod bought some 10% Rs. 100 shares t Rs. 200 and after getting dividend, sold them at Rs. 250. The brokerage was 0.25% on purchase and 0.20% on sale. Find the rate of return on investment.

[8]

B. Naksh invested Rs. 60000 on 10th march, 2011 in a mutual fund when NAV was Rs. 18.75 with an entry load of 2.25%. Calculate te value of his investment on the date of purchase and number of units. Also find it's value on 20th September 2011 when the NAV was Rs. 22.8.

[7]

OR

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C. Ms. Ranjana Natarajan invested Rs. 10000 in 'Birla Sunlife Equity Fund-Dividend Plan' on 10/07/2007, when the NAV was Rs. 78.04 and redeemed all the units on 12/11/2007 when NAV was Rs. 84.54. In the meanwhile, on 31/08/2007, she had received a dividend at Rs. 10 per unit. Find her total gain and the rate of return considering loads. The entry load was 2.25% and the exit load was 0.5%. The number of units were calculated correct upto 3 decimal places.

[8]

D. Mr. Maniram invested a sum of money in Rs. 100 shares quoted at a 20% premium. At 15%, he received a total dividend of Rs. 5400. Find his investment and the rate of return on his investment.

[7]

Q 5. Write short notes on following: (Any 3): [15]

A. Types of proportion and Entry Load
B. Discount and trade discount
C. Distinguish between simple and compound interest
D. Types of annuity
E. Distinguish between share and mutual fund.

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