

Subject : Introduction to Business Mathematics

Day : Wednesday
Date : 01/06/2016



Time : 10.00 AM TO 1.00 PM
Max Marks : 80 Total Pages : 1

N.B.:

- 1) Attempt any **FIVE** questions from Section – I. Each question carries **10** marks.
- 2) Attempt any **TWO** questions from Section – II. Each question carries **15** marks.
- 3) Answers to both the sections should be written in **SAME** answer book.
- 4) Use of Non-Programmable Calculator is **ALLOWED**.

SECTION-I

- Q.1** On a council, the ratio of men to women was 5:2. When the number of members in the council was increased by 4 men and one woman the ratio changed to 8:3. Find the number of members in the council originally. **(10)**
- Q.2** The annual income of A increased from Rs. 5,000 to Rs. 6,500 and that of another person B decreased from Rs. 7200 to Rs. 6,000. Calculate the respective percentages of increase and decrease in the incomes of A and B. **(10)**
- Q.3** The net pay for an employee is calculated as follows: **(10)**
Net Pay = Basic + HRA + DA + Special Allowance – Deductions
If the D.A is paid at 57% of basic, H.R.A at 20% of Basic, find the net salary of Rajan who has a basic pay of Rs. 7,500 with special allowance of Rs. 2500 and income tax deduction of Rs. 2,200.
- Q.4** A furniture dealer bought 80 chairs. By selling 50 chairs at a profit of Rs. 15 per chair and the remaining for Rs. 1200, he gains 25% on the whole. What is the cost price of a chair? **(10)**
- Q.5** (a) Find the derivative for $5x^4 - 9x^3 + 12x^2 - 7$ with respect to x . **(05)**
(b) How much amount will Ravi have to pay after 4 years for a loan of Rs. 80,000 at 11% per annum compounded yearly? **(05)**
- Q.6** Find the principal that is necessary to give Rs. 560 as interest in $3\frac{1}{2}$ years at 5% Simple Interest per annum. **(10)**
- Q.7** Find the difference between simple and compound interest on Rs. 15,000 for 5 years at $4\frac{1}{2}$ p.a. **(10)**

SECTION-II

- Q.8** a) Find the derivative of $\frac{3x^2 - 2}{4x^3 + 3}$ with respect to x . **(07)**
b) Find the 17th term and the sum of first 25 terms of : $7 + 10 + 13 + \dots$ **(08)**
- Q.9** Solve the following equations: **(15)**
 $x + 2y + 3 = 0$
 $3x + 5y + 7 = 0$
 $7x - 4y - 15 = 0$
- Q.10** If $\frac{1}{4}$ th of the cost price of the article is equal to $\frac{1}{5}$ th of the selling price and $\frac{1}{4}$ th of the selling price exceeds $\frac{1}{6}$ th of the cost price by Rs. 7, find the cost price, selling price and the percentage profit or loss. **(15)**

* * * *