

ST. JOSEPH'S EVENING COLLEGE (AUTONOMOUS)

II SEMESTER B.COM EXAMINATIONS - APRIL - 2018

BUSINESS MATHEMATICS

Duration: 2.5 Hours

Max. Marks: 70

SECTION - A**I) Answer any EIGHT of the following questions. (8x2=16)**

1. What is number system?
2. The ratio of two numbers is 2:3 and their sum is 85, find the numbers.
3. What is Bankers gain? Give the formula.
4. Find the 20th term of AP 15, 12, 9, 6.....
5. Distinguish between rational number and irrational number - any two.
6. State any two principles of solving simple equation.
7. What is HCF? Mention any two methods of HCF.
8. What is quadratic equation? State any two types of quadratic equation.
9. Product of two numbers is 4332 and LCM is 228. Find their HCF.
10. Define Determinants. State any two properties of determinants.
11. Write any two differences between compound interest and simple interest.
12. Distinguish between direct proportion and inverse proportion - any 2.

SECTION - B**II) Answer any THREE of the following questions. (3x8=24)**

13. What is Matrix? Briefly explain the matrix operations with example.
14. Four men can walk 105, 112, 126 and 168 kilometers in a week respectively. What is the least distance they can walk in an exact numbers 3 weeks?
15. Two brothers have their annual incomes in the ratio of 8:5 and their spending is in the ratio of 5:3. If they save Rs 24000 and 20000 per annum. Find their incomes.
16. If the 3rd and 6th term of an AP are 7 and 13 respectively. Find the first term, common difference and the sum of the series.
17. If the food grains production in India increased by 2.8 million tonnes every year and if the production in 2000 was 52 million tonnes, then What production is expected in 2020?

SECTION - C

III) Answer any TWO of the following questions.

(2x15=30)

18. A) The sum of three terms in GP is -21 and the last term is -1 . Find the others.
B) A man buys 8 dozens of mangoes, 10 dozens of apples and 4 dozens of bananas. Mangoes cost Rs 180 per dozen, apples Rs 90 per dozen, and bananas Rs 60 per dozen. Represent the quantities bought by a row matrix and prices by a column matrix and hence obtain the total cost.
19. A) Solve the equations $4X + Y = 24$ and $3X - 5Y = 8$, using Cramer's rule.
B) A moneylender lent some amount to a trader at 8% per annum, after 18 months that trader paid him Rs 70000 in full payment of interest and principal amount. Find out the sum lent by the moneylender.
20. A) Find the present value, true discount, banker's discount, and banker's gain on a bill of Rs 104500 due in 9 months at 6% per annum.
B) A, B and C are partners who share their profit in the ratio of their capital A's capital Rs 50000 and B's capital is Rs 250000. In 2015 profit was Rs 35000 in which C's share was Rs 15000. Find C's capital.
21. A) Solve $9X^2 - 3X - 2 = 0$ by using formula method.
B) Find the greatest number, which can divide 284, 698 and 1618 leaving the same remainder 8 in each case.