



Register Number:
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ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
BBA (Strategic Finance) - I SEMESTER
SEMESTER EXAMINATION: OCTOBER 2019
BBASF1319 - QUANTITATIVE TECHNIQUES

Time- 2 1/2 hrs

Max Marks-70

Section A

I. Answer the five questions Each question carries two marks (5x2=10)

1. A person desires to endow a bed in a hospital cost of which is Rs10000p.a.If the money is worth 5%,how much should he deposit in perpetuity?
2. The 3rd and 6th element of a GP are 3 and 81 respectively, Find the first element and common ratio of the GP.
3. The sum of the numerator and denominator of a fraction is 7. Four times the numerator is 8 less than 5 times the denominator .Find the fraction
4. Find the compound interest on Rs.10,000 at 7% for six years.

5. Show that $X = \begin{pmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{pmatrix}$ satisfies the equation $X^2 - 4X = 5I$

6. A number exceeds 40% of itself by 900. What is the number?

Section B

II. Answer any three questions. Each question carries five marks (3x5=15)

7. What equal payments made at the beginning of each year for 10 years will pay for a personal loan of Rs 80000, if the money is worth 7 % p.a?
8. Find the sum of the series $7 + 77 + 777 + \dots$ to n terms.
9. A man left for his two sons aged 56 years and 50 years, a sum of Rs 130000 to be divided between them in such a way that when they both attain the age of 58 years they will both receive the same amount at 12.5%. Find out how much each son received?
10. If Ram and Sham can do a work in 12 days, and Sham and Pam can do the work in 20 days and Ram and Pam take 15 days. How long will they take to do the work together? Also find how long will Pam take to do it alone?

Section C

III. Answer any three questions. Each question carries ten marks (2x15=30)

11. A] Ali lent Rs 10000 to two persons in two parts. The first man borrowed at 5% and second at 6 % simple interest per annum. If the maharaja receives Rs 2240 as total interest after 4 years then what sum was borrowed by each of the two persons?

B] Which term of the AP is 21, 18, 15 is -81? Also is any term 0? Give reasons

C] A manufacture produces three products A, B and C and sells in two markets. Annual sales of these products is given below :

	Product A	Product B	Product C
Market I	10000	2000	8000
Market II	6000	20000	4000

- a) If the unit sale price of A, B, C Rs 25, Rs 12, and Rs 15. Find the revenue in each market.
 - b) If the units cost price of A, B, C Rs 18, Rs 10, and Rs 8. Find the profit in each market.
12. A] solve for a : $\frac{2}{a-1} + \frac{3}{a+4} = \frac{5}{a+3}$

B] Rs 5625 is divided among A, B, C so that A receives "half" of what B & C get together and B receives "one fourth" of what A & C get together. Find how much did

A,B,C receive.

C] How many three digit numbers are divisible by 7 in a given AP ?

13. A] solve using Cramers rule :

$$2x + 5y = 26$$

$$5x - 4y = -1$$

B] Find the time in which Rs 7200 will amount to Rs 7700 Compound Interest at 8% Quarterly payment.

C] A dealer purchased a washing machine for Rs 7660. He allows a discount of 12% on its marked price and gains 10%. Find the marked price of the machine

Section D

IV. Answer the question given below; the question carries fifteen marks (1x15=15)

14. A] A contractor agrees to sink a well 250 ft deep at a cost of Rs 2.70 for 1st foot , Rs 2.85 for the 2nd foot and an extra 15 paise per additional foot . Find the cost of the last foot the total cost .

B] The cost of boring a well is given by the formula $C = 2x + \frac{x^2}{50}$, where C is the cost and x is the depth in feet . If the well costs Rs 28000 to bore , how deep was it ?

C] Lets say someone today was going to offer you a sure annuity of Rs 100 at the end of every year starting from the end of the sixth year until the end of the thirteenth year. How much is the investment worth at 12% ?
