

17.2.17

OLD

VCD **FYBMS BUSINESS MATHS SEM II ATKT EXAM 75 MARKS 2 ½ HRS.**

- Note: 1. All Questions are compulsory.
2. All Questions carry equal marks.

Q.No 1): Attempt any two. (7 ½ marks each)

A.i) On what sum of money will the difference between the compound interest and the simple interest for 2 year at 8% p.a. be Rs.384?

ii) What sum of will amount to Rs.8432 in 6 year at 4% p.a. simple interest?

B. If $f(x) = \log x$ show that

i) $f(xy) = f(x) + f(y)$

ii) $f(x/y) = f(x) - f(y)$

C. i) If $f(x) = ax^2 + 3x + c$, $f(0) = -3$, $f(-1) = -4$ find a and c .

ii) How many four digit numbers can be formed with the digits 1,2,3,4,5?

Q. No 2): Attempt any two. (7 ½ marks each)

A. Explain types of matrix?

B. $a = \begin{bmatrix} -3 & 2 \\ 4 & 2 \end{bmatrix}$ $b = \begin{bmatrix} 3 & 2 \\ 4 & 2 \end{bmatrix}$ find ab , ba and a^{-1} .

c. i) $\begin{vmatrix} x-1 & x+2 \\ x & x+1 \end{vmatrix} = 0$ find value of x ?

ii) $3x+4y=5$, $5x+7y=6$ find x and y by Cramer's Rule.

Q. No 3): Attempt any two. (7 ½ marks each)

A. i) $y = 3x^5 + 6e^x + 3^x + 2\sqrt{x} + \log x + 7$ find $\frac{dy}{dx}$.

ii) $y = x(3x^5 + 3^x + 2\sqrt{x})$ find $\frac{dy}{dx}$.

B.i) $y = \log x * e^x$ find $\frac{dy}{dx}$

ii) $y = x^4(3x^5 + x^6 + 2)$ find $\frac{dy}{dx}$

C.i) $y = 3x^5 + x^{-5} + \log x + \log x^5$ find $\frac{dy}{dx}$.

ii) $y = x^{-2}(3x^{-6} + x^{-4} + 2)$ find $\frac{dy}{dx}$

Q. No 4): Attempt any two. (7 ½ marks each)

A. Construct the forward difference table for $x=1,2,3,4,5$

And $f(x) = x^4 + x^3 + 4$.

B. IF $f(x) = x^2 + 4x$ find $\Delta f(x), \Delta^2 f(x)$

C. i) IF $f(x) = x^2 + 4x + 1$ find $\Delta f(x)$

ii) Construct the forward difference table for

X	1	2	3	4	5
f(x)	9	17	23	31	43

Q.No5): Evaluate. (15 marks)

A.) $M = \begin{bmatrix} 2 & -4 & 4 \\ -3 & -7 & 2 \\ -2 & -7 & 4 \end{bmatrix}$ $P = \begin{bmatrix} 9 & -4 & 4 \\ -3 & -7 & 2 \\ -5 & -4 & 4 \end{bmatrix}$

Find MP where M and P is 3×3 matrix also find $M^2 + 4P$