Seat No.:	
-----------	--

Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA (INTEGRATED) - SEMESTER- 1 • EXAMINATION - WINTER 2016

Subject Code: 4110503 Date: 16/12/2016

Subject Name: BUSINESS MATHEMATICS

Time: 10.30 a.m. to 01.30 p.m. Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1 (a) If
$$2A-B = \begin{bmatrix} 8 & 11 \\ 8 & 7 \end{bmatrix}$$
 $3A-B = \begin{bmatrix} 17 & 19 \\ 12 & 8 \end{bmatrix}$ **07**

Find 4A -3B

(b) Solve the following System of linear equation using matrix method 07

$$x + y + z + 1 = 0$$
 , $x + 2y + 3z = -4$, $x + 3y + 4z + 6 = 0$

- Q.2 (a) (1)Define the following with example.
 Square matrix, Unit matrix, Null matrix, Skew symmetric matrix
 (2) Write a properties for Determinants
 - (b) Explain difference between Simple interest and Compound interest With 07 Suitable Example

(b) If
$$A = \begin{pmatrix} 3 & 2 \\ 4 & 1 \end{pmatrix}$$

$$B = \begin{pmatrix} a & b \\ 3 & 5 \end{pmatrix}$$
 07

and AB = BA then find value of a, b. Also find 3A + 2B

- Q.3 (a) Gujarati borrowed Rs. 12000 from ICICI Bank on compound interest. The rate of interest is fixed at 12% for 7 years. What sum will Gujarati pay to clear the debt at the end of the period?
 - (b) Atul deposited Rs. 70,000 with a bank at 13% rate of simple interest for 8 years. If he deposits the same sum for the same period at the same rate of compound interest, find the difference of interests

Q.3 (a) Find the EMI on a loan of Rs. 75,000 to be repaid in equal monthly installments. Interest is charged at 12% pa on the loan outstanding at the beginning of each month and the time span of 5 years.

(b) Mr Amit borrowed Rs. 60,000 at 18% rate of simple interest and Page 1 of 2

profit or loss at the end of four years. **07 Q.4** (a) Explain the difference between cash discount and trade discount (b) Find the commission of manager of the firm at 10% on profit after **07** charging commission. The profit of the firm is Rs. 22,000. OR A person buys a product at 10% trade discount and 5% cash discount. **07 Q.4** The MRP of the product is Rs. 12000, find the amount to be paid by the retailer **07** (b) A broker is getting 5% commission on total sales and 2.5% as delcredre commission on credit sales. Credit sales is Rs.30,000 and the total sales is Rs. 80,000, find the total amount of commission. Q.5 (1) What must be added to the numbers 6, 10,14 and 22 so that they are in 07 proportion (2) The Scale of a map is 1:3000000. What is the actual distance between the two towns, if they are 3 cm apart on the map? (b) Two numbers are in the ratio 4:5. if the sum of the numbers is 135, find the 07 numbers OR If 36 men can do a piece of work in 25 days, in how many days will 15 men do 07 0.5 (a) (b) A number is increased by 10 % and then it is decreased by 10 %. Find the net **07** increase or decrease percent?

instantly lends the same at 16% rate of compound interest. Find his
