

Write Serial No. of your answer book _____

Time Allowed : 15 Minutes

Maximum Marks : 10

Signature of Deputy Supdt. _____

Note : Use this paper to write the answers to the objective questions. No mark will be awarded for cutting, over-writing or using a pencil. This paper must be tagged with the answer-book.

1. Some possible answers to each statement are given below. Tick (✓) mark the correct answer : 10

(i) The ratio $\frac{4}{9} : \frac{1}{3}$ in lowest term is : (4:3 , 3:4 , 9:3 , 3:1)

(ii) Interest is classified in : (Two classes. Three classes. Four classes. None of these.)

(iii) Rs.500 double itself in 5 years at the rate of : (20% , 30% , 40% , 50%)

(iv) 5, 10, 8 are : (Variables. Constants. Independent variables. None of these.)

(v) In the equation $3x - 6 = 0$, the quantity x is called :

(Constant. Unknown. Coefficient. None of these.)

(vi) The solution set of the equation $x^2 + 2x + 1 = 0$ is :

({ 1 } , { -1 } , { 1, -1 } , None of these)

(vii) If order of A is $m \times n$ and order of B is $n \times p$, then order of AB is :

($m \times p$, $m \times n$, $n \times m$, $p \times m$)

(viii) The determinant of the matrix $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ is :

(Zero. Negative. One. None of these.)

(ix) 21 in binary number system is : (10101 , 1011 , 10111 , 10001)

(x) Convert in decimal system to $(1001)_2$: (9 , 7 , 5 , 3)

Roll No _____ (To be filled in by the candidate)

(Academic Session 2006 – 2008)

BUSINESS MATHEMATICS 207-(INTER PART – I)

(Essay Type) GROUP – II

Time Allowed : 1.45 hours

Maximum Marks : 40

Note : All questions are/attempted on the answer book.

SECTION – I

2. Write any TWELVE short answers of the following questions :

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(i) Write the digits used in binary number system.

(ii) Name the number system which is commonly used.

(iii) Convert $(7)_{10}$ to its equivalent in binary number system.

(iv) Define a column matrix.

(v) Define a triangular matrix.

(vi) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 6 & 8 \\ 4 & -4 \end{bmatrix}$, then find $A + B$

(vii) If $4x - 3 = 2x + 7$, find 'x'.

(viii) Define a reciprocal equation.

(ix) Solve by factorization $8x^2 = 72$

(x) Define a constant function.

(xi) If $H(S) = S^2 - 4$, find $H(3)$

(xii) Write two consecutive integers whose sum is 41.

(Turn Over)

2. (xiii) Define an annuity due. (2)
 (xiv) Define interest.
 (xv) Write the formula for compound interest.
 (xvi) Reduce to its lowest terms 24 : 64
 (xvii) Find 20% of Rs.1100.
 (xviii) Define " Invoice Price".

SECTION – II

Note : Attempt any TWO questions.

3. (a) 14 cows consume 630 kg of hay in 18 days. How many cows will eat 700 kgs of hay in 28 days at the same time. 4
 (b) Find the future value of an annuity due to Rs.1500 each month for 3 years if the interest rate is 12% compounded monthly. 4
4. (a) If $f(x) = x^2 - 2x + 1$ find $f(1)$, $f(-1)$ and $f(x+h)$ 4
 (b) Solve $\frac{1}{x+3} - \frac{1}{x-3} = 3$ 4
5. (a) $A = \begin{bmatrix} -2 & 6 \\ 4 & 7 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$ prove that $(AB)^t = B^t A^t$ 4
 (b) Simplify : $(1010111)_2 \times (11011)_2$ 4