

Business Mathematics (INTERMEDIATE)
(PART – I) **22/01**

Marks : 10
 Time : 15 Minutes

(OBJECTIVE PART) **ATK-22**

Note:- Write your Roll No. in space provided. Over writing, cutting, using of lead pencil will result in loss of marks. All questions are to be attempted.

1- Each question has four possible answers, Tick (✓) the correct answer. (10)

1	The ratio between one hour and 40 minutes is;						
A	1 : 4	B	2 : 3	C	3 : 2	D	4 : 1
2	What percentage of 900 is 270;						
A	30 %	B	90 %	C	60 %	D	20 %
3	With usual notation Prt, is the formula for calculating;						
A	Simple interest	B	Compound interest	C	Annuity	D	Amount
4	The leading co-efficient of the polynomial $P(x) = 3x^2 + 5x + 8$ is;						
A	8	B	2	C	5	D	3
5	If $7x + 4 = 3x + 24$ then $x = ?$						
A	4	B	5	C	-4	D	-5
6	The number of methods to solve the quadratic equation, are;						
A	One	B	Two	C	Three	D	Four
7	9 to its equivalent number in binary system;						
A	$(1100)_2$	B	$(1001)_2$	C	$(1010)_2$	D	$(1011)_2$
8	Decimal number system is the system with base;						
A	2	B	5	C	8	D	10
9	If $\begin{bmatrix} 1 & 2 \\ -3 & 4 \end{bmatrix}$ then $A^t = ?$						
A	$\begin{bmatrix} 1 & -3 \\ 2 & 4 \end{bmatrix}$	B	$\begin{bmatrix} 4 & 2 \\ -3 & 4 \end{bmatrix}$	C	$\begin{bmatrix} 4 & 1 \\ 2 & -3 \end{bmatrix}$	D	$\begin{bmatrix} 4 & -2 \\ 3 & 1 \end{bmatrix}$
10	If $A = \begin{bmatrix} 2 & 9 \\ 3 & 8 \end{bmatrix}$ then $ A = ?$						
A	10	B	-10	C	11	D	-11

(The End)

SECTION - I

2- Write short answers of any six parts.

ATK-22

(2 x 6 = 12)

i	If 20 pens cost Rs 300, find the number of pens that can be bought for Rs. 480.	ii	Define direct proportion and give its example.
iii	If the mark up of 23% on sales a T.V. sells for Rs. 4400. What is its cost price?	iv	Give the formula to find principal amount with usual notations. explain its notation.
v	Define Annuity and give its types.	vi	Find simple interest on Rs. 700 invested for 3 year at 6% P.A.
vii	Solve the equation $4(3x - 2) = 7(2 - 5x) - 5x$	viii	Solve the equation by factorization. $x^2 + 8x + 12 = 0$
ix	Find the sum and product of the roots of $4x^2 + 5x - 21 = 0$		

3- Write short answers of any six parts.

(2 x 6 = 12)

i	Define Event Function and give an example.	ii	If $f(x) = 3x^2 + 2x - 1$, then find $f(-2)$ and $f(0)$
iii	Add $(1011)_2$ and $(1110)_2$	iv	Evaluate $(101)_2 - (11)_2$
v	Convert 19 into binary number system.	vi	Differentiate between singular and non singular matrix.
vii	Define transpose of a matrix by giving one example.	viii	If $A = \begin{bmatrix} 3 & 2 \\ 1 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 0 \\ 5 & 7 \end{bmatrix}$ then find AB
ix	Find the inverse of $\begin{bmatrix} 1 & 1 \\ 1 & 2 \end{bmatrix}$		

SECTION - II

Note:- Attempt any two questions.

(8 x 2 = 16)

4	a	A motorcycle covers 90 km in 2 litres of petrol. In how many litres of petrol it will cover 225 km?	(04)
	b	Find the compound interest on Rs. 500 invested for 6 months at 8% per annum.	(04)
5	a	Solve the equation $x^2 - 3(x + 25) = 9x$ by using quadratic formula.	(04)
	b	Sketch the graph of the function $f(x) = x^2$	(04)
6	a	Use Cramer's Rule to solve the system; $2x - 6y = -12$ $3x - 2y = -4$	(04)
	b	Without converting into decimal system, simplify. $\{(101100101)_2 + (100000)_2\} - \{(10001)_2 + (10000)_2\}$	(04)

(The End)