

PAPER CODE – 6641

11th CLASS – 1st Annual 2023

BUSINESS MATHEMATICS

DGK-11-23

ME: 15 MINUTES
MARKS: 10

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

Sr.No	QUESTIONS	A	B	C	D
1	The ratio between 1.5 cm and 4.5 cm is	2 : 5	3 : 1	1 : 3	2 : 3
2	If 7% of the amount is Rs 490, then what is the amount ?	Rs. 4000	Rs. 5000	Rs. 6000	Rs. 7000
3	A fee which is paid for having the use of money is called	Interest	Principal	Percentage	Annuity
4	If $f(x) = 4x^2 - 5x + 1$, then $f(-x) =$	$4x^2 - 5x - 1$	$4x^2 + 5x + 1$	$4x^2 + 5x - 1$	$4x^2 - 5x + 1$
5	The solution set of $\sqrt{x} + 3 = 4$ is	{1}	{ }	{-1}	{± 1}
6	The solution set of $8x^2 - 14x + 5 = 0$	$\left\{\frac{5}{2}, \frac{-3}{4}\right\}$	$\left\{\frac{-5}{2}, \frac{-3}{4}\right\}$	{-1, -3}	$\left\{\frac{-5}{2}, \frac{3}{4}\right\}$
7	8 in binary system is equal to	$(1001)_2$	$(1010)_2$	$(1000)_2$	$(1011)_2$
8	$(1111)_2$ in decimal system is equal to	23	13	25	15
9	If order of matrix A is 3 x 4 and order of matrix B is 4 x 2, then order of AB is	2 x 3	3 x 4	4 x 2	3 x 2
10	If $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$ then $A^t =$	$\begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$	$\begin{bmatrix} 1 & 3 \\ 2 & 4 \\ 5 & 6 \end{bmatrix}$	$\begin{bmatrix} 1 & 4 \\ 2 & 5 \\ 3 & 6 \end{bmatrix}$	$\begin{bmatrix} 1 & 2 \\ 3 & 5 \\ 4 & 8 \end{bmatrix}$

111 - (Obj) - 1st Annual 2023

(PAPER CODE – 6641)

BUSINESS MATHEMATICS

**TIME : 1.45 HOURS
MARKS : 40**

DGK-11-23

**SUBJECTIVE
SECTION-I**

QUESTION NO. 2 Write short answers of any Six (6) parts of the following 12

i	Divide Rs 750 in the ratio 3 : 2
ii	Find x if $x : \frac{1}{4} :: 12 : 3$
iii	A dealer buys a bicycle for Rs 1200 and sells it for Rs 1500. Find percentage profit.
iv	Find the simple interest to Rs 6000 borrowed for 3 years at the rate 8 % per annum.
v	Define the term "simple annuity".
vi	Solve $\frac{12x-5}{3} = \frac{4x+8}{4}$
vii	Find two consecutive integers whose sum is 43.
viii	Solve $3x^2 - 9x + 5 = 0$ by completing square.
ix	Discuss the nature of the roots of $x^2 + 6x + 9 = 0$

QUESTION NO. 3 Write short answers of any Six (6) parts of the following 12

i	Show that $f(x) = x^5 + x^3$ is an odd function
ii	Sketch the graph of the function $f(x) = x^2 + 4$
iii	Find the sum of $(23)_2 + (111)_2$
iv	Evaluate $(11011)_2 - (1101)_2$
v	Evaluate $(10101)_2 \times (111)_2$
vi	Find $ A $ Given that $A = \begin{bmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \\ 1 & 3 & 2 \end{bmatrix}$
vii	Find the inverse of A , where $A = \begin{bmatrix} 5 & 3 \\ 4 & 2 \end{bmatrix}$
viii	Find the value of x , $A = \begin{bmatrix} 3 & 2 \\ 4 & 6x \end{bmatrix}$ if $ A = 0$
ix	Find AB if $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$

SECTION-II

Note: Attempt any Two questions from this section 8 x 2 = 16

Q.4 (A)	If 6 pumps raise 108 liters of water in 12 minutes, how long will 4 pumps take to raise 96 liters of water?
(B)	Find the compound interest due in case of Rs 1000 loaned for 5 years at 6 % annually.
Q.5 (A)	If $f(x) = x^2 - 2x + 1$, find $f(-1)$, $f(0)$, $f(2)$ and $f(3)$
(B)	Solve $x^2 - 3x + 8 = 0$ using Quadratic Formula
Q.6 (A)	Find x and y If $\begin{bmatrix} x+3 & 1 \\ -3 & 3y-4 \end{bmatrix} = \begin{bmatrix} y & 1 \\ -3 & 2x \end{bmatrix}$
(B)	Multiply $(11111)_2$ and $(1111)_2$