1124 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------

(Inter Part – I) **(Session 2020-22 to 2023-25)** Sig. of Student ----------

Business Mathematics (Objective) **(Commerce Group)** **Paper (I)** SGD-24

Time Allowed:- 15 minutes **PAPER CODE 2641** Maximum Marks:- 10

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. Write **PAPER CODE**, which is printed on this question paper, on the both sides of the Answer Sheet and fill bubbles accordingly, otherwise the student will be responsible for the situation. Use of Ink Remover or white correcting fluid is not allowed.

Q. 1

1) 25 seconds : 2 minutes =

(A) 5 : 12 (B) 24 : 5 (C) 5 : 24 (D) 12 : 5

2) Formula for compound interest is

(A) $P(1+R)^n$ (B) $P[(1+R)^n-1]$ (C) PRT (D) $P(1-R)^n$

3) Commission on the deal of Rs. 8000 @ 5% =

(A) Rs. 400 (B) Rs. 250 (C) Rs. 500 (D) Rs. 300

4) If $4x - 5 = 5x - 6$, then x =

(A) 1.5 (B) 2.5 (C) 2 (D) 1

5) Roots of the quadratic equation $3x^2 + 2x - 1 = 0$ are

(A) $-1, \frac{1}{3}$ (B) $-1, -\frac{1}{3}$ (C) $1, \frac{1}{3}$ (D) $1, -\frac{1}{3}$

6) $(1111)_2 - (101)_2$ =

(A) $(1000)_2$ (B) $(1001)_2$ (C) $(1010)_2$ (D) $(111)_2$

7) Point (-5 , -6) lies in quadrant

(A) I (B) III (C) II (D) IV

8) A square matrix B is said to symmetric, If

(A) $B^t = B$ (B) $B^t = -B$ (C) $B^t = B^2$ (D) $B^t = 2B$

9) If order of matrix A = 3×4, order of matrix B = 4×3 , then order of BA =

(A) 3×3 (B) 4×3 (C) 3×4 (D) 4×4

10) The decimal number 13 is equal to

(A) $(1011)_2$ (B) $(1101)_2$ (C) $(1001)_2$ (D) $(1110)_2$

.124 **Warning:- Please, do not write anything on this question paper except your Roll No.**

(Inter Part - I) **(Session 2020-22 to 2023-25)**

Business Mathematics (Subjective) SGD-24 Paper (I)

Time Allowed: 1.45 hours **(Commerce Group)** Maximum Marks: 40

Section ---------- I

2. Answer briefly any Six parts from the followings:- **6 × 2 = 12**

(i) Divide Rs 60000 in the ratio 5 : 7 **(ii)** Define inverse proportion.

(iii) What percentage of Rs 120 is 84.

(iv) What is the Simple interest on Rs 8000 for two year's at 5%.

(v) Define Annuity due.

(vi) Find the value of x if $\frac{3x-1}{2-x}=2$ **(vii)** Solve the equation $\frac{1}{X}+\frac{2}{X}=15$

(viii) Find the Discriminant of $x^2 + 7x + 10 = 0$

(ix) Solve $3x^2 - 9x + 5 = 0$ by using Quadratic formula.

3. Answer briefly any Six parts from the followings:- **6 × 2 = 12**

(i) If $f(x) = 3x^2 + 4x$ find f(-1) and f(2).

(ii) Find x – intercept and y – intercept of the line $x + 3y = 9$

(iii) Convert into decimal system $(10001)_2$ **(iv)** Convert 15 into base 2.

(v) Simplify $(10110)_2 + (1000)_2$ **(vi)** If $A=\begin{bmatrix}1 & 5\end{bmatrix}$, $B=\begin{bmatrix}1\\5\end{bmatrix}$ *Find AB*

(vii) Find transpose of $A=\begin{bmatrix}1 & 2 & 3\\4 & 5 & 6\end{bmatrix}$ **(viii)** Find x so that $\begin{bmatrix}1 & -2\\-3 & x\end{bmatrix}$ *is singular*

(ix) Find inverse of A if $A=\begin{bmatrix}3 & 2\\1 & 2\end{bmatrix}$

Section ---------- II

Note: Attempt any TWO questions. **(8 × 2 = 16)**

4. (a) 14 Cows consumes 630 Kgs of hay in 18 days. How many cows will eat 770 Kgs of hay in 28 days at the same rate.

(b) Find the Present value of an amount of Rs. 12,000 at the end of 5 Years at 5% per year compounded annually.

5. (a) Find the domain and Range of $x = y + 5$ and draw the graph

(b) Solve the equation $x^{\frac{1}{3}} - 2x^{\frac{1}{6}} = 8$

6. (a) Solve the system of equations by matrices $2x+5y=30$, $3x-2y=7$

(b) Evaluate $(1010111)_2 \times (11011)_2$