SGD-11-23

1123 Warning:- Please write your Roll No. in the space provided and sign. Roll No----------

(Inter Part – I) **(Session 2019-21 to 2022-24)** Sig. of Student ----------

Business Mathematics (Objective) **(Commerce Group)** **Paper (I)**

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) The ratio between 7.5 kg and 3.5 kg is.

(A) 7:15 (B) 7 to 15 (C) 7÷ 15 (D) $15/7$

2) Rs 88 is what percent of Rs. 400?

(A) 22% (B) 21% (C) 23% (D) 25%

3) Simple interest on Rs 10,000 at the rate of 10% in 10 years is:

(A) 100 (B) 1000 (C) 10000 (D) 100000

4) A First degree equation is called.

(A) Quadratic Equation (B) Linear Equation (C) Non-Linear Equation (D) Constant

5) Discriminant of a quadratic equation is

(A) $b^2 + 4ac$ (B) $b^2 - 4ac$ (C) $-b^2 - 4ac$ (D) $-b^2 + 4ac$

6) The point (-2,-3) lies in the quadrant:

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

7) In binary number system, '2' is equal to:

(A) $(10)_2$ (B) $(11)_2$ (C) $(101)_2$ (D) $(110)_2$

8) $(100)_2 + (10)_2 = ?$

(A) $(111)_2$ (B) $(011)_2$ (C) $(110)_2$ (D) $(100)_2$

9) If A= $\begin{bmatrix} 2 & -1 \\ 4 & 3 \end{bmatrix}$ then $|A|=?$

(A) 11 (B) 10 (C) 6 (D) 8

10) The matrix $\begin{bmatrix} 2 & 0 \\ 0 & 3 \end{bmatrix}$ is

(A) Scalar (B) Diagonal (C) Identity (D) Null

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1123 Warning:- Please, do not write anything on this question paper except your Roll No.

(Inter Part - I) **(Session 2019-21 to 2022-24)**

Business Mathematics (Subjective) 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 20 pens between Ahmad and Ali in the ratio 3:2 **(ii)** Define direct proportion.

(iii) A radio was sold for Rs. 400 on 10% loss. Find the cost price of radio.

(iv) What must be rate of interest on Rs 4000 to produce Rs 200 in 8 months?

(v) 320 is what % of 800?

(vi) Define linear equation. **(vii)** Solve for x $\frac{3x}{4} - 2 = \frac{x}{3} + 3$.

(viii) The sum of a number and its reciprocal is 20. Find the quadratic equation in standard form.

(ix) Solve $5x^2 + 3x = 0$.

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

(i) Define 'Domain' of function y=f(x).

(ii) Draw the graph of $f(x) = 2x - 1$.

(iii) Convert 32 into binary number system. **(iv)** Simplify $(1110)_2$-$(101)_2$

(v) Convert $(101)_2$ into Decimal base system. **(vi)** Define Column Matrix.

(vii) If A=$\begin{bmatrix} 2 & -1 \\ 2 & 1 \end{bmatrix}$ and B=$\begin{bmatrix} 1 & 2 \\ 1 & 1 \end{bmatrix}$ Find A+B. **(viii)** If $A = \begin{bmatrix} 3 & 4 \\ 5 & 6 \end{bmatrix}$, *find* $\frac{1}{2}|A|$.

(ix) Find $A^{-1}, if\ A = \begin{bmatrix} 1 & 2 \\ -1 & 2 \end{bmatrix}$.

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

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

4. (a) Rs. 4000 are sufficient for a family of 4 members for 40 days. For how many days Rs. 15000 will be sufficient for a family of 5 members.

(b) Compute compound interest on Rs. 5000 for $6\frac{1}{2}$ years at $2\frac{1}{2}$% compounded semi-annually.

5. (a) If $y = 3x - 6$ then find x – intercept and y –intercept and draw the graph.

(b) Solve $\frac{x+2}{x-3} + \frac{x-3}{x+2} = \frac{5}{2}$ for $x \neq 3, -2$.

6. (a) Solve by Crammer's rule $4x - y = 13$

$3x - 2y = 6$

(b) Evaluate $(100111)_2 \times (111)_2$