

SWL-11-19

Roll No. Sahival Annual 2019

Business Mathematics (New Scheme) (INTER PART - I CLASS 11th) (I)

Time : 15 Minutes

Paper : I

OBJECTIVE

Marks : 10

Code : 6641

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 with marker or pen. Cutting or filling two or more circles will result in zero mark in that question.

- If $39 : x :: 18 : 6$ then the value of x is
(A) 15 (B) 14 (C) 13 (D) 12
- Rs 250 is $2\frac{1}{2}\%$ of what amount?
(A) 10,000 (B) 1000 (C) 100 (D) 1,00,000
- Amount paid to an agent as the remuneration of services is called
(A) Salary (B) Loss (C) Profit (D) Brokerage
- Simple interest I is
(A) $P(1+I)^n$ (B) Pn (C) SRi (D) $\frac{R}{A}$
- Solution set of $x + y = 12$ is
(A) $\{(10, 2)\}$ (B) $\{(4, 2)\}$ (C) $\{(8, 1)\}$ (D) $\{(4, 6)\}$
- $5x + 7 = 0$ is a
(A) Non-linear equation (B) Quadratic equation (C) Cubic equation (D) linear equation
- A quadratic equation has
(A) One root (B) three roots (C) two roots (D) four roots
- If $y=f(x)$ then ' f ' is called
(A) Implicit function (B) Explicit function (C) Constant function (D) Identity function
- The matrix $\begin{bmatrix} 2 & 2 \\ 3 & 3 \end{bmatrix}$ is
(A) Scalar (B) Rectangular (C) Singular (D) Non-Singular
- In the binary number system $5 =$
(A) $(101)_2$ (B) $(1010)_2$ (C) $(111)_2$ (D) $(10)_2$

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(S)

Note :- Section I is compulsory. Attempt any Two Questions from section II.
(Section = I)

2. Write short answers to any Six parts. (6 x 2 = 12)

- i. Define ratio.
- ii. Find the missing quantity $\frac{9}{x} = \frac{30}{270}$
- iii. Find 30% of 800
- iv. Express 20% as a fraction
- v. Find the simple interest on Rs 500 borrowed for 4 years at 11% per annum
- vi. Define annuity due
- vii. Define rate of interest.
- viii. Solve for x $\frac{1}{2x} + \frac{1}{4x} = 4$
- ix. Solve for x $\frac{3x+2}{4} = \frac{2x+6}{5}$

3. Write short answers to any Six parts. (6 x 2 = 12)

- i. Find x and y if $3x + 2y = 10$; $2x - 2y = 5$
- ii. Solve $2x^2 + 16 = 12x$
- iii. Define Quadratic Equation
- iv. Define even function with example.
- v. $f(x, y) = 2x - 3y + xy - 2$; find $f(1,2)$
- vi. Prove that $A = \begin{bmatrix} 3 & 1 \\ 6 & 2 \end{bmatrix}$ is singular.
- vii. If $A = \begin{bmatrix} -1 & 2 \\ 1 & 0 \end{bmatrix}$, find A^2
- viii. Convert 22 into base 2
- ix. Evaluate $(111)_2 + (111)_2$

Section = II

Note: Attempt any Two questions. (Each question carries (4 + 4 = 8) marks)

4. (a) In an election there were two candidates one of them received 65% of the votes casted and secured a majority of 1500 votes more than his competitor. How many people casted the votes?
(b) If Rs: 3000 are invested at 6% interest compounded semi-annually. What would be the amount at the end of 8 years?
5. (a) Solve $8x^2 - 14x - 15 = 0$, by using quadratic formula.
(b) Solve the system of simultaneous linear equations $2x - 7y = 8$
 $x - 4y = 4$
6. (a) Solve the following system of linear equations by Cramer's rule $2x + 4y = 50$
 $x - y = 10$
(b) Simplify $(1101)_2 \times (1101)_2$