

GENERAL MATHEMATICS

For Class-X

- 1. ALGEBRAIC FORMULAS AND APPLICATIONS**
 - 1.1 Algebraic Expressions
 - 1.2 Algebraic Formulas
 - 1.3 Surds and their Application
 - 1.4 Rationalization
- 2. FACTORIZATION**
 - 2.1 Factorization
 - 2.2 Remainder Theorem and Factor Theorem
 - 2.3 Factorization of Cubic Polynomial
- 3. ALGEBRAIC MANIPULATION**
 - 3.1 Highest Common Factor and Least Common Multiple
 - 3.2 Basic Operations on Algebraic Fractions
 - 3.3 Square Root of Algebraic Expression
- 4. LINEAR EQUATIONS AND INEQUALITIES**
 - 4.1 Linear Equations
 - 4.2 Equation involving Absolute Value
 - 4.3 Linear Inequalities
 - 4.4 Solving Linear Inequalities
- 5. QUADRATIC EQUATIONS**
 - 5.1 Quadratic Equation
 - 5.2 Solution of Quadratic Equations
 - 5.3 Quadratic Formula
- 6. MATRICES AND DETERMINANTS**
 - 6.1 Introduction to Matrices
 - 6.2 Types of Matrices
 - 6.3 Addition and Subtraction of Matrices
 - 6.4 Multiplication of Matrices
 - 6.5 Multiplicative Inverse of a Matrix
 - 6.6 Solution of Simultaneous Linear Equations
- 7. FUNDAMENTALS OF GEOMETRY**
 - 7.1 Properties of Angles
 - 7.2 Parallel Lines
 - 7.3 Congruent and Similar Figures
 - 7.4 Congruent Triangles
 - 7.5 Quadrilaterals
 - 7.6 Circle
- 8. PRACTICAL GEOMETRY**
 - 8.1 Construction of Triangle
 - 8.2 Construction of Quadrilateral
 - 8.3 Tangent to the Circle
- 9. AREAS AND VOLUMES**
 - 9.1 Pythagoras Theorem
 - 9.2 Areas
 - 9.3 Volumes
- 10. INTRODUCTION TO COORDINATE GEOMETRY**
 - 10.1 Distance Formula
 - 10.2 Collinear Points



Federal Board SSC-II Examination
General Mathematics Model
Question Paper

FBISE

WE WORK FOR EXCELLENCE

Roll No:

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Answer Sheet No: _____

Signature of Candidate: _____

Signature of Invigilator: _____

SECTION – A

Time allowed: 20 minutes

Marks: 15

Note: Section-A is compulsory and comprise pages 1-2. All parts of this section are to be answered on the question paper itself. It should be completed in the first 20 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q.1 Insert the correct option i.e. A / B / C / D in the empty box provided opposite each part. Each part carries one mark.

i. $(x + y)^2 + (x - y)^2 = ?$

A. $4xy$

C. $2(x^2 + y^2)$

B. $x^2 + y^2$

D. $2xy$

ii. If $x = \sqrt{5} + 2$ then $\frac{1}{x} = ?$

A. $\sqrt{5} - 2$

C. $-\sqrt{5} - 2$

B. $-\sqrt{5} + 2$

D. $5 - \sqrt{2}$

iii. Factorization of $a^2 - 1$ is:

A. $(a+1)(a^2-1)$

C. $(a-1)$

B. $(a+1)$

D. $(a+1)(a-1)$

iv. If $y-a$ is a factor of $P(y)$, then $P(a) = ?$

A. 0

C. $-a$

B. 1

D. a

v. H.C.F of $x^2 - a^2$ and $(x+a)^2$ is:

A. $(x+a)^2$

C. $(x-a)$

B. $(x+a)$

D. $(x+a)(x-a)$

vi. L.C.M of $12P^3q^3$, $8P^2$ is:

A. $24Pq^2$

C. $24P^3q^2$

B. $24P^3q^3$

D. $12P^2q$

vii. Solution of $|x| = 5$ is:

A. 5

C. ± 5

B. -5

D. 9

DO NOT WRITE ANYTHING HERE

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- viii. A quadratic equation has a degree:
- A. 1 B. 2
C. 3 D. zero
- ix. $|A| = \begin{vmatrix} -1 & 2 \\ -3 & -4 \end{vmatrix} = ?$
- A. -10 B. -2
C. 10 D. 2
- x. A triangle with no equal side is called:
- A. equilateral B. scalene
C. isosceles D. right-angled
- xi. Angle in a semicircle is a:
- A. right-angle B. acute angle
C. obtuse angle D. Non of these
- xii. The number of medians in a triangle = ?
- A. 1 B. 2
C. 3 D. 4
- xiii. Volume of the cube whose edge is 2m:
- A. $2m^3$ B. $4m^3$
C. $6m^3$ D. $8m^3$
- xiv. (5, -2) lies in _____ quadrant.
- A. 1st B. 2nd
C. 3rd D. 4th
- xv. Points lying on the same line are called:
- A. non-collinear B. collinear
C. equal D. overlapping

For Examiner's use only

Q No.1: Total Marks:

15

Marks Obtained:



Federal Board SSC-II Examination General Mathematics Model Question Paper

Time allowed: 2.40 hours

Total Marks: 60

Note: Sections 'B' and 'C' comprise pages 1-2 and questions therein are to be answered on the separately provided answer book. Attempt nine parts from section 'B' and attempt any four questions from section 'C'. Use supplementary answer sheet i.e., sheet B if required. Write your answers neatly and legibly.

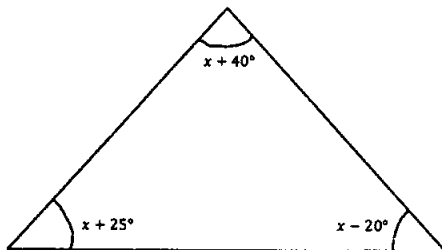
SECTION-B

(Marks: 36)

Q.2 Attempt any NINE parts of the following. Each part has equal marks.

(Marks 9x4 = 36)

- If $x = \sqrt{3} - \sqrt{2}$, then find the value of $x^2 + \frac{1}{x^2}$
- Find the value of $a^2 + b^2$ and ab when $a + b = 5$ and $a - b = 3$.
- Factorize $x^3 + y - xy - x$.
- Resolve into factors $x^2 - 2xy + y^2 - a^2 + 2ab - b^2$.
- If $P(x) = x^3 - kx^2 + 3x + 5$ is divided by $x - 1$, find k , if remainder is 8.
- If $x^4 + lx^3 + mx^2 + 12x + 9$ is a complete square then find the values of l and m .
- Solve and check $|3x + 4| = 9$
- Solve $x^2 + 6x - 3 = 0$ by completing the square method.
- Find x and y if $\begin{bmatrix} x + 3 & 1 \\ -3 & 3y - 4 \end{bmatrix} = \begin{bmatrix} 2 & 1 \\ -3 & 2 \end{bmatrix}$
- If $\begin{bmatrix} 1 & 5 \\ 3 & a \end{bmatrix} \begin{bmatrix} b \\ 7 \end{bmatrix} = \begin{bmatrix} 35 \\ 10 \end{bmatrix}$, then find the values of a and b .
- If $M = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find M^{-1}
- Find the value of x in given triangle.



- The sides of a quadrilateral are 2cm, 4cm, 6cm and 7cm. The longest side of a similar quadrilateral is 21cm. Find the other sides.

- xiv. A 25m ladder leans against a house with its foot 15m from the house. How far is the top of the ladder from the ground?

SECTION – C

(Marks: 24)

Note: Attempt any FOUR questions. Each question carries equal marks.

(Marks 4x6=24)

Q.3 Simplify $\frac{x^4 - y^4}{x^2 - 2xy + y^2} \times \frac{x - y}{x(x + y)} \div \frac{x^2 + y^2}{x}$

Q.4 The perimeter of rectangle is 22cm and its area is 24cm. Calculate the length and breadth of rectangle.

Q.5 Solve $x + 2y = 3$, $x + 3y = 5$ by using Cramer's rule.

Q.6 Draw an equilateral triangle ABC in which $m\overline{AB} = m\overline{BC} = m\overline{AC} = 5\text{cm}$. Draw its altitudes and measure their lengths, are they equal?

Q.7 Find area of washer, whose outer diameter is 6.4cm and the diameter of hole is 3.6cm.

Q.8 Show that the point A(-3, 0), B(3, 0) and C(0, $\sqrt[3]{3}$) are of an equilateral triangle.
