## SYLLABUS / PAPER PATTERN CLASS - VIII

## **MATHEMATICS**

#### SECTION A- OBJECTIVE (Marks-20)

PAPER PATTERN	MARKING SCHEME/GUIDELINE
This section comprises of 20 MCQs from Unit No 1-13. 18 - MCQs from exercises and 2 MCQs from inside the Chapters based on SLOs.	1- Marks will be awarded for correct answer

#### SECTION B- SUBJECTIVE (Marks-32)

PAPER PATTERN	MARKING SCHEME/GUIDELINE
This section is composed of 12 questions having short answers. Students will attempt 8 questions from this section. 10 questions have been taken from exercises unit (1-13) and 2-questions are constructed from inside the chapter.	Each Question is of 4 Marks. Full Marks will be awarded for correct answer.

#### SECTION C - SUBJECTIVE (Marks-24)

PAPER PATTERN OSUT	MARKING SCHEME/GUIDELINE
This section is composed of 7 questions. Question No 3-9. Students will	Each Question of this section is of 8 Marks.
attempt 4 questions from this section. This section covers all units	Questions are composed of two parts. Full
(1-8). 6 questions are taken from exercises of chapters while	Marks will be awarded for correct answer
1 question is constructed from inside the chapter based on SLOs.	(with Diagram if required).

#### **SECTION D- OBJECTIVE (Marks-24)**

PAPER PATTERN	MARKING SCHEME/GUIDELINE
This section is composed of 7 questions. Question No 10-16. Students	Each Question of this section is of 8 Marks.
will attempt 4 questions from this section. This section covers all units	Questions are composed of two parts. Full M
(9-13). 6 questions are taken from exercises of chapters while	arks will be awarded for correct answer (with
1 question is constructed from inside the chapter based on SLOs.	Diagram if required).

# **MODEL PAPER CLASS - VIII**



# **MATHEMATICS**

#### **Total Marks: 100**

#### **Time Allowed: 30-Minutes**

**Note:** This paper consists of Four Sections. Section A need to be done on the Question Paper. Section B, C and D to be done on the Answer Sheet. Cutting, erasing and overwriting is not allowed while attempting the section A.

# SECTION - A (Marks 20)

Q.1. Encircle the correct option.	Each question carries equ	ial marks.	
(i) Multiplicative inverse of _	does not exist.		
(a) 1	(b) 0	(c) -1	(d) 0.2
(ii) Round off value of 18.253	nearest to one decimal p	lace is:	
(a) <b>18.3</b>	(b) 18.4	(c) 18.5	(d) 18.0
(iii) Cube root of $(24 \div 8) \times 9$	is:		
(a) <b>8</b> 1	(b) 27	(c) 9	(d) 3
(iv) Cost of one dozen eggs is	Rs.180. What is the cost o	of 3 eggs?	
(a) <b>Rs.30</b>	(b) Rs.40	(c) Rs.45	(d) Rs.50
(v) Tabular form of $\{x : x \in$	$W \land x \le 3$ is:		
(a) $\{0, 1, 2, 3\}$	(b) {1, 2, 3}	(c) {0, 1, 2}	(d) {3, 4, 5,}
(vi) If U is universal set and A	is the subset of U, then:		
(a) $A \cup A' = \phi$	(b) $A \cap A' = \phi$	(c) $A \cap A' = U$	(d) $A \cup A' = A$
(vii) $\left(\sqrt{x} + \sqrt{y}\right)\left(\sqrt{x} - \sqrt{y}\right)$	is equal to:		
(a) $x + y$	<b>(b)</b> $x^2 + y^2$	(c) $x - y$	(d) $x^2 - y^2$
(viii) The fifth term in the seq	uence 1, 8, 27, is:	_	
(a) 64	(b) 81	(c) 100	(d) 125
(ix) Number of solution sets o	of two simultaneous equat	tions of parallel lines is:	
(a) no	(b) one	(c) two	(d) three
(x) If $(6, c) = (-d, -1)$ the	en the value of <i>d</i> is:		
(a) $-1$	(b) 6	(c) 5	(d) - 6
(xi) The image of point $(-3,$	, $7)$ when translated 3 un	its right and 4 units down	is:
(a) $(-3, 4)$	<b>(b)</b> (0, 3)	(c) $(0, 5)$	(d) $(-3, -4)$
(xii) The reflection of $(-3, 4)$	)about x-axis is:		
(a) $(3, 4)$	<b>(b)</b> $(3, -4)$	(c) $(-3, -4)$	(d) $(-3, 4)$
(xiii) Angle in a semi-circle is	always:		
(a) $90^{\circ}$	(b) 100°	(c) $150^{\circ}$	(d) 180°
(viv) If each of the three angle	es in a quadrilateral is 75°	, then the fourth angle is:	
(a) $150^{\circ}$	(b) 135°	(c) $90^{\circ}$	(d) <b>75</b> °
(xy) Sum of two adjacent ang	des of a narallelogram is:	(c) 50	(u) 75
(a) 360°	(b) 270°	(c) 180°	(d) 90°
(xvi) Measures of three sides	of a triangle are 3cm. 4cm	n and 5cm. The triangle is	(_) / · ·
(a) isosceles	(b) acute angled	(c) right angled	(d) obtuse angled
(xvii) Volume of cone with rad	dius of base 3cm and heig	ht 12 cm, is:	( )
(a) $108\pi  cm^3$	<b>(b)</b> $54\pi cm^3$	(c) $45\pi cm^3$	(d) $36\pi  cm^3$
(xviii) The difference between	the smallest and largest	values in a data is	. /
(a) mean	(h) range	(c) median	(d) mode
(xix) What is the standard de	viation of the data set: 3.	3. 3. 3. 3?	(-)
(a) 0	(b) 3	(c) 6	(d) does not exist
(xx) The probability of getting a head while tossing a coin is:			
(a) 0	(b) 1	(c) one-fourth	(d) one-half

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## SECTION -B (Marks-32)

#### **Total Marks: 100**

# Time Allowed: 2:30-Hours

Q.2. Atte	empt any EIGHT (08) parts. Each part carries equal marks. (8×4 = 32)
(i)	Find absolute value of $ 3x - 4x + 3 $ when $x = 3, 4$
(ii)	Estimate the value of : (i) 15.1+ 36.02 - 8.9 (ii) $\sqrt{16.3 \times 24.8}$
(iii)	Find the square root of 167281 by division method.
(iv)	For 28 scouts 168 <i>kg</i> food is sufficient for 6 days. For how many days 144 <i>kg</i> food is sufficient if 8 more scouts join them?
(v)	Find the power set of the set of letters of word AAQIB.
(vi)	Factorize: $25\left(x+\frac{5}{4}\right)^2 - 16\left(x+\frac{7}{4}\right)^2$
(vii)	Use the given formula to find first four terms of the sequence:
	$a_n = 5n - 12$
(viii)	Which of the following order pairs are solutions of the corresponding systems of linear equations $2x - y = -4$ . $4x - 2y = -8$ ?
	(0, 4), (3, 10), (-2, 0), (3, 0)
(ix)	Find the area of sector if central angle $x$ and radius $r$ of a circle are:
	$x = 30^{\circ}, r = 14cm$
<b>(x)</b>	Find the total surface area of a regular pyramid with a square base if each edge of the
	base measures 16cm and slant height is 17cm.
(xi)	Calculate the mean and variance of 0, 2, 4, 6, 8.
(xii)	A ball is drawn at random from a box containing some balls numbered

(i) an even number (ii) a composite number.

## SECTION -C (Marks-24)

Note: Attempt any FOUR (04) questions. Each part carries equal marks. (4×6 = 24).
 Q.3 Raiqa is decorating for a birthday party and she purchases 20.7 feet of purple ribbon. She

plans to use  $\frac{1}{3}$  of the ribbon in the drawing room and  $\frac{1}{2}$  of remaining in the dining

room. How much ribbon will she have left over?

- Q.4 Given a circle of radius 21cm correct to the nearest cm. What is the possible maximum error when calculating its area?
- Q.5 Find the square root of  $\frac{13}{7}$  upto 2-places of decimal.
- Q.6 Ali bought 6kg rice from the market for Rs.890. The shopkeeper got profit of 5%. The shopkeeper bought the same rice from the whole seller. The Whole seller got a profit of 4% from the shopkeeper. Find the cost price of whole seller?

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Q.7 The Venn diagram illustrates the number of students in 8<sup>th</sup> class who study drawing and agriculture. Determine the number of students who study:
(a) in the class (b) both subjects
(c) at least one of the subjects (d) only agriculture



Q.8 Factorize the following: (i)  $-3y^2 + 36y - 108$  (ii)  $1 - x^2 - 2xy - y^2$ 

Q.9 Find graphical solution of the system of equations. Also state if the system has no solution or infinitely many solutions.

2x - y = 4, -4x + 2y = 12

## SECTION -D (Marks-24)

Note: Attempt any FOUR (04) questions. Each part carries equal marks.  $(4 \times 6 = 24)$ 

- Q.10 Graph triangle  $\triangle ABC$  with vertices A(-1, 1), B(-4, 4) and C(-4, 1). Join  $\triangle ABC$  with origin O(0, 0) through vertex *B*. Graph the image of the shape *OBAC* after a 180° counter clockwise rotation about the origin.
- Q.11 Find  $\angle AEB$ ,  $\angle a$ ,  $\angle b$  and  $\angle c$  in the following figure if  $\angle CED = 110^{\circ}$ .



- Q.12 Construct an equilateral triangle GHI such that GH = HI = GI = 6.2cm. Draw right bisectors of any two sides of triangle.
- Q.13 Calculate the volume of the composite figure.



6cm

12cm

- Q.15 The roof above a Masjid has the shape of half sphere with diameter 14 m.
- (i) Find the area of the roof
- (ii) What is the cost of the construction of roof @ Rs.2000/Square meter?
- Q.16 A card is selected at random from a well shuffled pack of 52 cards. What is the probability that it will be:
  - i. A king card,
  - ii. A red card,
  - iii. A spade card?

