52-A

SUMMATIVE ASSESSMENT - I - 2017-2018

MATHEMATICS PAPER - I

(English Medium)

PART - A & B

Class : IX **(Max. Marks : 40)** **Time : 2.45 Hrs.**

Instructions :

1. **15 Minutes are allotted for reading the question paper (Part A &B) in addition to 2.30 hours for writing the answers.**
2. **Part - A answers should be written in a separate answer book.**
3. **There are three Sections in Part - A.**
4. **Answer all the questions.**
5. **Every answer should be visible and legible.**
6. **There is internal choice in Section - III.**
7. **Part-A & B should be given at the beginning of the exam only.**

Marks : 30 **PART-A**

Section - I

Note: 1. Answer all the Questions.

2. Each Question carries 1 Mark **4 × 1 = 4**

1. Find two rational numbers between $\frac{-2}{3}$ *and* $\frac{1}{4}$
2. Give two examples for polynomials of degree 5.
3. What is conjecture? Give an example
4. Represent $\frac{-8}{5}$ on the number line

Section - II

Note: 1. Answer all the Questions.

2. Each Question carries 2 Marks **5 × 2 = 10**

5. Simplify $\sqrt[4]{81} - 3\sqrt[3]{243} + 5\sqrt[4]{625}$

6. If 3 is a zero of the polynomial $x^2 + 2x - a$ find the value of 'a', and the other zero

7. If a point Q lies between two points P and R such that $\overline{PQ} = \overline{QR}$. Prove that

$$\overline{PQ} = \frac{1}{2}\overline{QR}$$

8. Give possible values for length and breadth of the rectangle whose area is $25a^2 - 35a + 12$.

9. Find the area of the triangle whose base and altitude are $3+\sqrt{3}$ and $3-\sqrt{3}$.

Section - III

Note: 1. Answer all the Questions.

2. Each Question has internal choice

3. Each Question carries 4 Marks $4 \times 4 = 16$

10. a) If $a = \frac{2-\sqrt{5}}{2+\sqrt{5}}$, $b = \frac{2+\sqrt{5}}{2-\sqrt{5}}$ then find the value $a^2 - b^2$

(OR)

b) Factorise $x^3 - 23x^2 + 142x - 120$

11. a) a and b are rational numbers, if $\frac{\sqrt{5}+\sqrt{3}}{\sqrt{5}-\sqrt{3}} = a + b\sqrt{15}$ then find the value of $(a+b)^a$

(OR)

b) When a polynomial $2x^3 + 3x^2 + ax + b$ is divisible by $(x-2)$ leaves remainder 2, and $(x+2)$ leaves remainder -2. Find a and b

12. a) State whether the following statements are true (or) false. Justify your answers with suitable reasons.

i) Only one line can pass through a given point

ii) Circles with same radii are equal

iii) The ray $\overrightarrow{AB}$ is same as the ray $\overrightarrow{BA}$

iv) A finite line can be extended on its both sides endlessly to get a straight line.

(OR)

b) Verify whether $2x^4 - 6x^3 + 3x^2 + 3x - 2$ is divisible by $x^2 - 3x + 2$ or not? using factor theorem.

13. Represent $\sqrt{5}$ on the number line

(OR)

b) Visualize $3.8\overline{5}$ on the number line through successive magnification up to 4places decimals.

Regd.No. | | **52-B** | Marks: | |

SUMMATIVE ASSESSMENT - I - 2017-2018

MATHEMATICS PAPER - I

(English Medium)

Class IX

Part - B

Time : 30minutes **Marks : 10**

Acadamic Standards	Problem Solving						Reasoning			Commu nication			Connetion			Visnalism		
Q.NO.s	1	5	6	10	11	14-19	7	12	20-23	3	4	24-27	8	9	28-31	4	13	32 - 33
Marks																		
Total Marks																		

Name of the Student : ..... **Roll No.:** .....

Note:

1. **Answer all question in Part - B**
2. **Each Question has 4 options. Write the capital letter indicating the answer in the given brackets.**
3. **Marks are not awarded for over writing answers.**
4. **All questions carry equal marks.**

14. If x = 1 and y = 2 then $\left(\frac{x}{y}\right)^{x-y} + \left(\frac{y}{x}\right)^{y-x}$ ( )

A) 2 B) 4 C) 8 D) 1

15. If $x + \frac{1}{x} = 5$ then the value of $x^2 + \frac{1}{x^2} =$ ( )

A) 25 B) 10 C) 23 D) 3

16. If $x + 1$ is factor of the polynomial $2x^2 + kx$ then the value of k ( )

A) -2 B) -3 C) 4 D) 2

17. The value of polynomial $4x^2 - 5x + 3$, when x = -1 ( )

A) 2 B) -6 C) 12 D) 4

18. $x^3 - 2x^2 - 5x + 4$ is divided by x - 2 then the remainder is ( )

A) 6 B) 10 C) 14 D) - 6

19. If $49a^2 - b = \left(7a + \frac{1}{2}\right)\left(7a - \frac{1}{2}\right)$ then the value of b is ( )

A) 0 B) $\frac{1}{4}$ C) $\frac{1}{2}$ D) $\frac{1}{\sqrt{2}}$

20. Which of the following is irrational ( )

A) $\sqrt{\frac{4}{9}}$ B) $\frac{4}{5}$ C) $\sqrt{81}$ D) $\sqrt{7}$

21. Which of the following number repersents a non – terminating, repeating decimal? ( )

A) $\frac{39}{24}$ B) $\frac{3}{16}$ C) $\frac{3}{11}$ D) $\frac{137}{25}$

22. Which of the following is not a polynomial? ( )

A) $3xyz$ B) $3\sqrt{x} + 5$ C) $y^2 + 8$ D) $x^3 + 3$

23. If x and y are positive integers and $x \neq y$, which statement is true? ( )

A) $\sqrt{x} - \sqrt{y} = \sqrt{x - y}$ B) $\sqrt{x} + \sqrt{x} = \sqrt{2x}$

C) $x\sqrt{y} = y\sqrt{x}$ D) $\sqrt{xy} = \sqrt{x}.\sqrt{y}$

24. How many books are there in Euclid's Elements? ( )

A) 10 B) 11 C) 12 D) 13

25. If $a + b + c = 0$ then $\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab} =$ ( )

A) 0 B) 1 C) -1 D) 3

26. The $\frac{p}{q}$ form of the decimal $0.\overline{3}$ is (where p,q are integers and, $q \neq 0$) ( )

A) $\frac{33}{100}$ B) $\frac{3}{10}$ C) $\frac{1}{3}$ D) $\frac{3}{100}$

27. How many points can two distinct lines intersect at the most ( )

A) 0 B) 1 C) 2 D) 3

28. If the volume of a cuboid is $3x^2 - 27$, then the possible dimensions are( )

A) $3, x^2, -27x$ B) $3, x-3, x+3$

C) $3, x^2, 27$ D) 3,3,3

29. If the length and breadth of rectangular sheet of card board are $13\sqrt{3}$ units and $6\sqrt{3}$ units then its area in square units ( )

A) 234 B) $78\sqrt{3}$ C) $19\sqrt{3}$ D) $38\sqrt{3}$

30. Perimeter of an equilateral triangle is $4\sqrt{3}\,cm$, then length of its side is ..... ( )

A) 4 cm B) $\frac{4}{\sqrt{3}}cm$ C) 3 cm D) $\frac{\sqrt{3}}{4}cm$

31. The value of $\frac{(2.3)^3-(0.3)^3}{(2.3)^2+0.69+(0.3)^2}$ is ( )

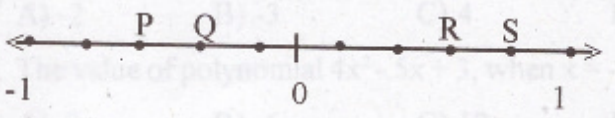
(Hint:- $a^3-b^3=(a-b)(a^2+ab+b^2)$)

A) 2 B) 3 C) 2.3 D) 0.3

32. Given three distinct points in a plane, how many lines can be drawn by joining them? ( )

A) 1 B) 2 C) 3 D) A or C

33. Which among them represents $\frac{-3}{5}$ on the number line ( )



A) P B) Q C) R D) S