SET - II

SUMMATIVE ASSESSMENT - I - 2016-2017
MATHEMATICS - Paper - 1
(English Version)
PART - A & B

Class : X **Max. Marks : 40** **Time : 2:45Hrs.**

Marks : 30 **Part - A**

Instructions:

1. **15 minutes of time is alloted for reading the question paper.**
2. **Answer ALL questions.**
3. **Answer for questions under Part-A should be written in a separate answer book.**
4. **There is internal choice for questions in Section-III, Part-A.**

SECTION - I

Instructions:

(i) **Answer all questions.**

(ii) **Each question carries 1 mark.** **4 x 1 = 4 Marks**

1. Determine the value of $\log_{3/5}\frac{243}{3125}$

2. If A = {0,1,2} and B = {2,4} then find $n(A \cup B)$.

3. Check whether $\frac{1}{2}$ is the zero of the polynomial $2X^2 + X - 1$ or not.

4. Explain the terms in the formula $V = l \times b \times h$

SECTION - II

Instructions:

(i) **Answer all questions.**

(ii) **Each question carries 2 marks.** **5 x 2 = 10 Marks**

5. Solve $7^{x} = 9^{x-2}$

6. Establish the relation among the sets of Real Numbers, Rational, Irrational, Integers, whole numbers and Natural Numbers using Venn diagrams.

7. Verify the ralationship between the zeroes and the coefficients of $X^2 - 25$ by finding its zeroes.

8. Give two examples for the polynomials p(X) and g(X), satisfying the Division Algorithem $p(X) = g(X) \times q(X) + r(X)$ such that $r(X) = 0$.

9 If 'A' is the set of all primes below '5' and 'B' is the set of all prime factors of '30', then is A - B = B - A?

SECTION - III

Instructions:

1. **Answer all the questions.**
2. **Choose (a) or (b) any one from each question.**

4 x 4 = 16 Marks

10. (a) Verify that 4, -1, $-\frac{1}{4}$ are the zeroes of the cubic polynomial $4X^3 - 11X^2 - 19X - 4$ and check the relationship between zeroes and coefficients.

(OR)

(b) Prove that $2\sqrt{5} + \sqrt{7}$ is an Irrational Number. Also check whether $(2\sqrt{5} + \sqrt{7})\ (2\sqrt{5} - \sqrt{7})$ is rational or Irrational.

11. (a) Draw the graph of the polynomial $X^2 + X - 6$ and mark the zeroes of the Polynomial on graph.

(OR)

(b) Represent the following through Venn - diagram.

(i) A - B (ii) B-A (iii) $A \cup B$ (iv) $A \cap B$

12. (a) Selfhelp group wants to manufacture Joker's caps (conical caps) of 6 cm radius and 8 cm hight. If the available colour paper sheet is 1000 cm^2 then how many caps can be manufactured from that paper.

(OR)

(b) Write a quadratic eqation whose roots are the solutions of $2X + y = 7$ and $X - y = 2$.

13. (a) If A = {X : 'X' is a Natural number below 10}
B = {X : 'X' is an even number below 10}
C = {X : 'X' is an odd number below 10} then
find (i) A - B (ii) A- C (iii) $B \cup C$
(iv) Also mention the Mutually disjoint sets among (i), (ii) and (iii).

(OR)

(b) (i) If $\log\left[\frac{X+y}{3}\right] = \frac{1}{2}(\log X + \log y)$ then find $\frac{x}{y} + \frac{y}{x}$

(ii) Find $3^{2+\log_3 2}$

SET - II

SUMMATIVE ASSESSMENT - I - 2016-2017
MATHEMATICS -Paper - 1
(English Version)
PART - B

Class : X **Marks : 10**

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

	AS-1					AS-2				AS-3				AS-4		AS-5		Total	Grade
Q.No	1	2	5	13	14 - 29	3	7	10	30 - 31	4	8	32	33	9	12	6	11		
Marks																			
Total																			

Marks : 10 **Part - B**

Instructions:

1. **Answer all the questions 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 witing answers.**
4. **All questions carry equal marks.**

SECTION - IV

Instructions:

1. **Answer all the questions.**
2. **Each question carries ½ mark.** **20 x ½ = 10 Marks**

14. H.C.F of 324 and 360 is **[ ]**

A) 9 B) 1 C) 63 D) 36

15. $\log_x \sqrt[3]{x}$ = **[ ]**

A) 3 B) $\frac{1}{3}$ C) $0.\overline{3}$ D) B and C

16. $\log_4 8^2$ [ ]

A) 4 B) 8 C) 2 D) 3

17. Last digit of 5^{100} is [ ]

A) 5 B) 6 C) 0 D) Can not say

18. If 'A' and 'B' are two sets such that $A \subset B$ then $A \cup B$ = [ ]

A) A B) B C) $A \cap B$ D) None

19. If 'A' and 'B' are disjoint sets then $n(A \cap B)$ = [ ]

A) 1 B) ϕ C) 0 D) { }

20. Match the following [ ]

Group - I	Group - II
L) $A \cup B$	i) $A \cap B$
M) $\{X : X \in A \text{ and } X \in B\}$	ii) $\{X : X \in A \text{ and } X \notin B\}$
N) A - B	iii) $\{X : X \in A \text{ or } X \in B\}$
O) If $X \in A$ then $X \in B$	iv) $A \subset B$

A) L $\rightarrow$ (iii), M $\rightarrow$ (i), N $\rightarrow$ (ii), O $\rightarrow$ (iv)

B) L $\rightarrow$ (i), M $\rightarrow$ (ii), N $\rightarrow$ (iii), O $\rightarrow$ (iv)

C) L $\rightarrow$ (iii), M $\rightarrow$ (i), N $\rightarrow$ (iv), O $\rightarrow$ (ii)

D) L $\rightarrow$ (iii), M $\rightarrow$ (ii), N $\rightarrow$ (i), O $\rightarrow$ (iv)

21. $A \cap \phi \neq$ _____ [ ]

A) A B) ϕ C) $\phi - A$ D) { }

22. The degree of the polynomial $9xy^3+10y^4+\frac{5}{4}x^4\frac{7}{3}x^3y^2$ is [ ]

A) 3 B) 2 C) 4 D) 5

23. The zero of the linear polynomial $2X+3$ is [ ]

A) 0 B) $\frac{-3}{2}$ C) $-1\frac{1}{2}$ D) B and C

24. The product of the zeros of the polynomial $3X^3 - 5X^2 - 10X + 15$ is [ ]

A) -5 B) 5 C) $\frac{5}{3}$ D) $\frac{-10}{3}$

25. The quadratic polynomial with zeros 2 and 3 is [ ]

A) $X^2 - 5X + 6$ B) $(X - 2)(X - 3)$

C) $2X^2 - 10X + 12$ D) All the above

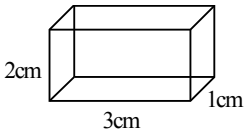
26. The radius of a conical tent is 3 meter and height is 4 meter then its slant height is _____ meter. [ ]

A) 5 B) $\sqrt{25}$ C) A and B D) none

27. The total surface area of a solid hemisphere of radius 1 unit is [ ]

A) $3\pi r^2$ B) $2\pi r^2$ C) 3π D) 2π

28. [ ]

Volume of 

is __C.C

A) 16 B) 10 C) 6 D) 12

29. The ratio of volumes of a cone and cylinder with same base and equal heights is [ ]

(i) 3 : 1 (ii) 1 : 3 (iii) 2 : 6 (iv) 3 : 9

A) (i) only B) (ii) only C) (ii) and (iii) only D) (ii), (iii) and (iv)

30. Which of the following are terminating decimals.

(i) $\frac{16}{125}$ (ii) $\frac{25}{32}$ (iii) $\frac{100}{81}$ (iv) $\frac{14}{75}$ [ ]

A) (i) B) (ii) and (ii) C) (ii) and (iii) D) none

31. Which of the following is empty set. [ ]

A) Set of Even numbers < 5 B) Set of Odd numbers < 3

C) Intersection of Even and Odd numbers D) none

32. Roster form of {**X** : '**X**' is an even prime below 10} is [ ]

A) {2} B) {2, 4} C) {2, 4, 6} D) {2, 4, 6, 8}

33. If $A = \pi rl$ which of the following is not correct. [ ]

A) $l = \frac{A}{\pi r}$ B) $r = \frac{A}{\pi l}$ C) $r = \frac{Al}{\pi}$ D) none