S-48-A

MIDTERM EXAMINATIONS (2018 - 19)

MATHEMATICS

(English Medium)

PART - A & B

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

Instructions :

1. **In the time duration of 2 hrs 45 min. 15 minutes is exclusively allotted to read and understand the question paper.**
2. **The question paper comprises of three sections I, II, III.**
3. **All questions are compulsory.**
4. **There is no overall choice. However there is an internal choice to the questions under Section-III.**

Marks : 30 **PART-A** **Time : 2 Hrs.**

Section - I

Note : 1. Answer all the questions.

2. Each question carries 1 Mark. **$4 \times 1 = 4$**

1. Find the H.C.F of 408 and 1032 by using Euclids division Lemna.
2. A and B are disjoint sets. If n (A) = 4, n (A $\cup$ B) = 10 then find n(B) ?
3. $P(m) = m^2 - 3m + 1$ find the value of P(1) and P (–1).
4. In ΔABC, DE//BC and AC = 5.6 cm, AE = 2.1 cm then find AD : DB.

Section - II

Note : 1. Answer all the questions.

2. Each question carries 2 Marks. **$5 \times 2 = 10$**

5. Prove that $6+\sqrt{2}$ is irrational number.
6. A is a set of zeroes of $x^2 - 3x + 2$, write the sub sets of A.
7. Find the quadratic polynomial whose zeroes are $2+\sqrt{3}$ and $2-\sqrt{3}$.
8. $\Delta ABC \sim \Delta DEF$ and their areas are respectively 64 cm^2 and 121 cm^2. If EF = 15.4 cm then find BC

PTO

9. Write the formula to find the mode of the grouped data and express each term in words.

Section - III

Note : 1. Answer all the questions.

2. Choose any one from each question.

3. Each question carries 4 Marks. **$4 \times 4 = 16$**

10. Prove that $\sqrt{7}$ is irrational number.

(OR)

If $(2.3)^x = (0.23)^y = 1000$ then find the value of $\frac{1}{x} - \frac{1}{y}$

11. $A = \{1, 2, 3, 4, 5, 6\}$, $B = \{2, 4, 6, 8\}$ then find

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

What do you observe.

(OR)

Verify that 1, – 1 and – 3 are the zeroes of the cubic polynomial

$x^3 + 3x^2 - x - 3$ and check the relationship between zeroes and the coffficients.

12. ABC is right triangle right angled at 'C'. Let BC = a, CA = b, AB = c and Let p be the length of perpendicular from C on AB.

Provt that i) $pc = ab$ ii) $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$

(OR)

Find the Arithmetic mean by step deviation method.

C.I.	10 – 19	20–29	30–39	40–49	50–59	60–69
Frequency	5	12	14	18	7	1

13. Draw the graph of $P(x) = x^2 + 3x - 4$ and find the zeroes.

(OR)

Convert the distribution given below to a less than type cumulative frequency distribution and draw its ogive.

Daily Income in Rs.	200–300	300–400	400–500	500–600	600–700
No. of workers	20	35	19	42	34

Regd. No. [ ] **S-48-B** Marks : [ ]

MIDTERM EXAMINATIONS (2018 - 19)

MATHEMATICS

(English Medium)

Part - B

Class : X] **(Marks : 10)** **Time : 30 min.**

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

Note :1. Each question carries equal marks.

2. Each question has 4 option. Write the capital letters indicating the answer in the given bracket.

3. Marks are not awarded for over writing answers.

Section –IV

Note : 1. Answer all the questions.

2. Each question carries $^1/_2$ mark. **$20 \times {}^1/_2 = 10$**

14. The rational numbers between $\frac{2}{3}$ and $\frac{3}{4}$ is [ ]

1) $\frac{33}{24}$ 2) $\frac{17}{24}$ 3) $\frac{33}{48}$ 4) $\frac{29}{48}$

A) 1, 3 B) 2, 3 C) 2, 4 D) 1, 2, 4

15. Which of the following is not irrational [ ]

A) $\sqrt{5}+\sqrt{3}$ B) $\sqrt{25}+\sqrt{3}$ C) $\sqrt{25}+\sqrt{9}$ D) $\sqrt{5}+\sqrt{9}$

16. Which one is not correct. [ ]

A) $2^6 = 64 \Leftrightarrow 6 = \log_2 64$ B) $8^2 = 64 \Leftrightarrow 2 = \log_8 64$

C) $3 = \log_4 64 \Leftrightarrow 4^3 = 64$ D) $\log_{64} 1 = 64 \Leftrightarrow 64^1 = 64$

17. $\log_{10} 64 \div \log_{10} 8$ [ ]

A) 56 B) 8 C) 4 D)2

P.T.O

18. 'A' is the set of all factors of 20 then A = ... [ ]

A) {2, 4, 5, 10, 20} B) {4, 5, 10, 20}

C) {4, 5, 10, 15, 20} D) {1, 2, 4, 5, 10, 20}

19. If A = {x : x ∈ N and 1 < x < 10} then n (A) = ... [ ]

A) 8 B) 10 C) 9 D) 6

20. {2} is a ..... [ ]

1) Finite set 2) singleton set 3) even prime number set

A)1, 2 correct B) 2, 3 correct C) 1, 3 correct D) All correct

21. If $A \subset B$ then $A \cup B$ = ... [ ]

A) A B) B C) ϕ D) μ

22. Which of the following is not a subset of {2, 3, 5, 7} [ ]

A) {2, 3, 5} B) {3, 5, 7} C) {3, 5} D) {1, 3, 5}

23. α, β, γ are the zeroes of $3x^3 - 5x^2 - 11x - 3$ then $\alpha.\beta.\gamma$ = [ ]

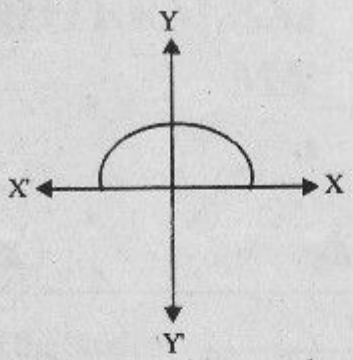
A) 1 B) $\frac{1}{3}$ C) $-\frac{5}{3}$ D) $-\frac{11}{3}$

24. If the degree of $15x^4y^2z^K$ is 10 then K = ... [ ]

A) 15 B) 10 C) 4 D) 2

25. The zero of the polynomial 2x – 3 is ..... [ ]

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

26. 

No.of zeroes of the graph. [ ]

A) 2 B) 3 C) 0 D) 4

27. $\Delta ABC \sim \Delta PQR$ and $\angle A + \angle B = 130°$ then $\angle R =$ [ ]

A) 70° B) 60° C) 50° D) 180°

28. In a ΔABC, $b^2 = a^2 + c^2$ then ..... is a right angle. [ ]

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

29. $\Delta ABC \sim \Delta PQR$ then AB : PQ = ... [ ]

A) QR : BC B) AC : PR C) PR : AC D) None

30. Angle in a semi circle is ..... [ ]

A) 90° B) 180° C) 360° D) 0°

31. A.M of a – 5, a, a + 5 is ..... [ ]

A) a B) 0 C) 3 D) 5

32. Median of x, $\frac{x}{2}, \frac{x}{3}, \frac{x}{4}, \frac{x}{5}$ is 4 then x [ ]

A) 8 B) 12 C) 16 D) 20

33. If the mode of the data 16, 12, 15, 12, 13, x, 13 is 13 then x = [ ]

A) 12 B) 13 C) 15 D) 16