

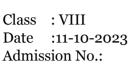
# **BK BIRLA CENTRE FOR EDUCATION**

SARALA BIRLA GROUP OF SCHOOLS SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL

# MID-TERM EXAMINATION 2023-24



**MATHEMATICS (041)** 



## **General Instructions:**

1. This Question Paper has 5 Sections A, B, C, D and E.

2. Section A has 20 MCQs carrying 1 mark each

3. Section B has 5 questions carrying 02 marks each.

4. Section C has 6 questions carrying 03 marks each.

5. Section D has 4 questions carrying 05 marks each.

1. Between two rational numbers we can find:

6. Section E has 3 case based integrated units of assessment (04 marks each) with sub- parts of the values of 1, 1 and 2 marks each respectively.

7. All Questions are compulsory. However, an internal choice in 2 Qs of 5 marks, 2 Qs of 3 marks and 2 Questions of 2 marks has been provided.

## **SECTION A**

a)	one rational num	nber b) two rational num	ibers. c) infinite ra	tional numbers
d) r	none of the above			
2. The r	reciprocal of x is	:		
a)		b)	c)	d)
3. 5º x	6º x 7º is equal to			
a) (	3	b) 210	c) 1	d) none of these
4. The	standard form of	492000 is :		
а	) 4.92	b) 4.92 x 10 ⁵	c) 4.92 x 10 -5	d) 4.92 x 10 <sup>4</sup>
5.8	<sup>5</sup> 8 <sup>3</sup> is equal to			
а	) 8 8	b) 8 <sup>2</sup>	c) 8 -2	d) 8 -8
6. Th	ne solution of 2x-3	=7 is:		
а	) 5	b) 7	c) 12	d)11

7. The age of the father is **four times** the age of the son. If the age of the son is **15** years old, then the age of the father is:

	a) 60 years	b) 55 years	c) 40 years	d) 45 years
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8. If a number is divided by 8 it gives 6 as the value. Find the number.



Duration : 3 Hrs Max. Marks : 80 Roll No.:

a) 36	b) 42	c) 48	d) 56	
<ol> <li>In the grouped data</li> <li>a) Class interval</li> </ol>	ata, each of the group b) Collection of data		d) Grouped frequency distribution	
10. If a die is thrown	in the air, the probat	oility of getting ev	ven numbers is:	
a)	b)	c)	d) none of these	
11. A die is thrown.	What is the probabilit	y of getting <b>even</b>	prime number?	
a)	b)	c)	d)	
12. The algebraic ex	pression			
a) Monomial	b) Binomial	c) Trinomial	d) None of the these	
13. The area of a red	ctangle whose length	and breadth are	respectively is:	
a)				
14.				
a b) c)	d) 0			
15. If AB and CD are	two parallel sides of	a parallelogram,	then:	
a) AB>CD	b) AB <cd< td=""><td>c) AB=CD</td><td>d) None of the these</td></cd<>	c) AB=CD	d) None of the these	
16. If ∠A and ∠B are	e two adjacent angles	of a parallelogra	m. If ∠A = 70°, then ∠B = ?	
a) 70°	b) 90°	c)110°	d) 180°	
17. The angles of a d	quadrilateral are in th	e ratio 1 : 5 : 6 : 8	3. The angles are	
a) 18º, 90º , 108º ,	144° b) 26° ,	52°, 72°, 186°	c) 20° , 100° , 120° , 160°	
d) 30º , 150º , 158	8° , 240°.			
18. The quadrilatera	al whose diagonals are	e perpendicular t	o each other is:	
a) Parallelogram	b) Rectangl	e c) Trapez	ium d) Rhombus	
19. Assertion (A) –10	) metres of cloth cost	Rs 1000. 4 metre	es costs Rs 400	
<b>Reasons (R)</b> –A d	irect proportion show	vs the direct the r	elation between two quantities.	
a) Both A and R are true and R is the correct explanation of A b) Both A and R are true but R is not the correct explanation of A c) A is true but R is false d) A is false but R is true				

20. Assertion (A) –40 cows can graze a field in 16 days. The 64 cows will graze the same field in 10 days

**Reasons (R)** – An inverse proportion shows inverse or indirect relation between two quantities

a) Both A and R are true and R is the correct explanation of A

- b) Both A and R are true but R is not the correct explanation of A
- c) A is true but R is false

d) A is false but R is true

#### SECTION B

## SECTION B CONSISTS OF 5 QUESTIONS OF 2 MARKS EACH.

- 21. Evaluate : i) 5 -2 ii) () -5
- 22. Solve for : 7 9 = 4 + 15 OR

+ =

- 23. Find the product : (  $2pq + 3q^2$  ) and ( $3pq 2q^2$  )
- 24. Three angles of a quadrilateral are 50 °, 68 °, 115 °. Find the fourth angle.

## OR

The measures of two adjacent angles of a parallelogram are in the ratio 3 : 2. Find the measure of each of the angles of the parallelogram.

25. A machine in a soft drink factory fills 840 bottles in **six** hours. How many bottles will it fill in **five** hours?

## SECTION C

## SECTION C CONSISTS OF 6 QUESTIONS OF 3 MARKS EACH.

26. Find the value of x : ()  $-5 \times ($ ) -11 = ()  $8 \times ($ 

## OR

Express in the standard form : i) 58300 ii) 447 00 00 iii ) 234 000

- 27. Two numbers are in the ratio 5:8. If the sum of numbers is 182, find the numbers.
- **28.** If you have a spinning wheel with 3 green sectors, 1 blue sector and 1 red sector, what is the probability of getting a green sector? What is the probability of getting a non-blue sector?

29.

OR

(c)

30. Find the angle measure in the above figure.

31. A farmer has enough food to feed 20 animals in his cattle for 6 days. How long would the food last if there were 10 more animals in his cattle?

# SECTION D

SECTION D CONSISTS OF 4 QUESTIONS OF 5 MARKS EACH.

32. Find TEN rational numbers between and

33.

#### OR

Solve for :

34. Draw a pie chart showing the following information. The table shows the colours preferred by a group of people.

Colours	Number of people
Blue	. 18
Green	9
Red	6
Yellow	3
Total	36

- 35. Suppose 2 kg of sugar contains  $9{\times}10^{\rm 6}$  crystals. How many sugar crystals are there in
  - (i) 5 kg of sugar? (ii) 1.2 kg of sugar?

OR

If 1800 can finish the construction of a building in 40 days , how many persons are needed for the construction of the building in 24 days ?

## **SECTION E**

36. Three friends Ram, Rahim and David went to "RADHEY SWEET MART" to purchase some sweets, namkin and cold drinks for New year party. The following chart shows the price and available stock of sweets and namkin in the shop. Answer the following questions using the below given chart.

S.NO.	SWEETS AND NAMKIN	AVAILABLE STOCK	PRICE
1	SWEET LADDU	10 Kg	₹ 400 per Kg
2	JALEBI	8 Kg	₹ 360per Kg
3	BARFI	7 Kg	₹ 300 per Kg
4	MIX-NAMKIN	100 packets	₹80 per packet
5	POTATO CHIPS	80 packets	₹ 30 per packet
6	COLD DRINKS	50 Bottles	₹ 50per bottle
7	ROASTED DRY FRUITS	12 Kg	₹1000 per Kg

- i) After purchasing 500gm of sweet laddu, jalebi and barfi each, Ram had Rs150 left with him. How much money does Ram had before the purchase?
- 2.

1.

1

- ii) Ram wants to purchase one packet of Mix-Namkin and two packets of potato chips with the remaining Rs150. Explain whether he can purchase it or not.
- iii) Find the price of two cold drinks bottle and one kg of Barfi .

37. Two friends Richa and Sohan have some savings in their piggy bank. They decided to count the total coins they both had. After counting they find that they have fifty Rs 1 coins, forty-eight Rs 2 coins, thirty-six Rs 5 coins, twenty-eight Rs 10 coins and eight Rs 20 coins. Now, they said to Nisha, another friends, to choose a coin randomly.



Find the probability that the coin chosen isi) Rs 5 coinii) Rs 20 coin38. 2 , 2 , 100 , 6 , , 8 2 , 8 , -15i) Write the like terms in the given expressions.ii) What is the coefficient of in 1001iii) Find the sum of like terms.2

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