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परमाणु ऊर्जा शिक्षण संस्था Atomic Energy Education Society टर्म-1/आवधिक परीक्षा-2 2023-24 Term-I/PT-II Examination 2023 - 24 कक्षा /Class :VIII अवधि/ Duration :3 Hours विषय /Subject :Mathematics अधिकतम अंक/ Maximum Marks :80

General Instructions:

1. This question paper consist of four sections A,B,C and D.

2. Section A has 30 questions of 1 mark each. Question number 28 to 30 is based on case study.

3. Section B has 4 questions and each question carries 2 marks.

4. Section C has 6 questions and each question carries 3 marks.

5. Section D has 6 questions and each question carries 4 marks.

	SECTION –A	
1.	Which of the following type of numbers are closed under only multiplication?	(1)
	a) Rational Numbers b) Odd numbers	
	c) Whole Numbers d) Natural Numbers	
2.	The number line for natural numbers is	(1)
	a) the line that extends indefinitely on both sides	
	b) the line that extends indefinitely to the right, but from 0	
	c) the line that extends indefinitely only to the right side of 1	
	d) the line that extends indefinitely on both sides, but you can see numbers only	
	between -1 , 0 and 0, 1 etc	
3.	How is $-28/84$ expressed as a rational number with numerator 4?	(1)
	a) 4/7 b) -4/12 c) 4/(-12) d) 4/-7	
4.	What is the sum of additive inverse and multiplicative inverse of 5?	(1)
	a) 1/5 b) -1/5 c) 24/5 d) -24/5	
5.	Which among the following is a rational number equivalent to (-7)/(-3)	(1)

	a) 63/-27	b) -63/27	c) 63/27	d) -63/18	
6.	The one's digit of	the cube of the numb	per 129 is –		(1)
	a) 1	b) 0	c) 8	d) 9	
7.	Find the smallest 1	number by which the	number 675 must be	divided to obtain a	(1)
	perfect cube -				
	a) 26	b) 24	c) 25	d) 23	
8.	Find the number o	f digits in the square	root 27225(without a	ny calculation).	(1)
	a) 1	b) 2	c) 3	d) 4	
9.					(1)
	Solve: $\frac{5Y}{63} + \frac{2}{7} =$	6			
	a) 74	b) 63	c) 72	d) 49	
10.	The sides of a hex	agon are produced in	order. Which of the f	following is the sum	(1)
	of its exterior angl	es?			
	a) 540°	b)180°	c) 720°	d) 360°	
11.	Which one is not a	a quadrilateral?			(1)
	a) Rhombus	b) Triangle	c) Square	d) Rectangle	
12.	$\angle A$ and $\angle B$ are tw	o adjacent angles of p	parallelogram ABCD.	. If $A = 70^{\circ}$, then $B = ?$	(1)
	a) 110°	b) 180°	c) 70°	d) 90°	
13.	Choose the correct	t answer from the stat	ements given below:		(1)
	1. Diagonals of a r	ectangle are perpendi	icular bisectors of one	e another.	
	2. Diagonals of a r	hombus are perpendi	cular bisectors of eac	h another.	
	3. A parallelogram	n's diagonals are perp	endicular bisectors of	f one another.	
	a) Only statemen	nt 2 is true.			
	b) Statements 1,	2 and 3 are true.			
	c) Statements 2	and 3 are true.			
	d) Statements 1	and 2 are true.			
14.	A coin is flipped in	n the air. What is the	probability of getting	a tail.	(1)

	a) 0	b) $\frac{1}{2}$	c) 1	d) 2	
15.	Pictorial representati	on of data using sy	mbols is known as:		(1)
	a) Bar graph	b) Pictograph	c) Pie chart	d) None of these	
16.	Double bar graphs di	splay sets	of data simultaneou	ısly.	(1)
	a) Four	b) Three	c) Two	d) No	
17.	What is raw data?				(1)
	(a) Organized data				
	(b) Unorganized dat	a			
	(c) Data on bar graph	1			
	(d) Data on a pie cha	rt			
18.	Radius of the circle i	n pie chart depend	s on		(1)
	(a) Range of date				
	(b) Frequency of data	a			
	(c) Median of data				
	(d) None				
19.	Find the least number	er that must be sub	tracted from 5607 s	o as to get a perfect	(1)
	square.				
	a) 131	b) 130	c) 135	d) None of these	
20.	Sum of squares of tw	o numbers is 145.	If square root of on	e number is 3, find the	(1)
	other number-				
	a) 8	o) 64	c) 9	d) 81	
21.	Express 35^2 as the su	am of two consecu	tive numbers		(1)
	a) 35 and 36		b) 612 and 613		
	c) 614 and 615		d) 365 and 366		
22.	A Pythagorean triple	t whose smallest n	nember is 8.		(1)
	a) 8, 15, 17		b) 8, 6, 10		
	c) 5, 12, 13		d) Cannot be de	fined	
23.	2025 plants are to be	planted in a garde	n in such a way tha	t each row contains as	(1)
	many plants as the nu	umber of rows. Fin	nd the number of row	ws and the number of	

	plants in each ro	W.			
	a) 45 and 45 resp	pectively	b)	35 and 45 respectively	
	c) Both (a) and ((b)	d)	None of the above	
24.	Which of the fol	lowing numbers i	s not a perfect cube?		(1)
	a) 15625	b)13824	c)12167	d)13754	
25.	The cube of an o	dd natural numbe	er is –		(1)
	a)an even nu	ımber	b)a odd nu	umber	
	c)maybe eve	en, may be odd	d)a prime	number	
follo An o two is ju varia	owing questions equation is the eq expressions are 2 ust a number. Bu ables. For exampl s; the expression of	uality of the value $x - 3$ and 7. In m t this need not a value, the equation 2 on the LHS is (2x)	tes of two expression ost examples that we always be so; both x - 3 = x + 2 has e	assage and give the answer ass. In the equation $2x - 3$ is have come across so far, a sides could have expression expressions with a variable on on the RHS is $(x + 2)$.	= 7, th the RH3 ons with
20.	a) 1	b) 2	c) 3	d) None of these	(1)
		(2r - 3) = (r + 2)	\ / 1		
27.	b) L.H.S ₇ c) Can,t s	= R.H.S for $x =$ \neq R.H.S for $x =$ say	1		(1)
	a) L.H.S= b) L.H.S ₇ c) Can,t s d) None o	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these	1		
27. 28.	a) L.H.S= b) L.H.S ₇ c) Can,t s d) None o	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these	1	d) -1	(1)
28.	a) L.H.S= b) L.H.S; c) Can,t s d) None of Find the value of a) 5	= R.H.S for x = \neq R.H.S for x = say of these f x from the equat b) -5 Two adjacent side	1 1 tion $2x - 3 = x + 2$ c) 1	d) -1 re equal. The name of the	
28.	a) L.H.S= b) L.H.S; c) Can,t s d) None of Find the value of a) 5 Assertion (A) – quadrilateral is	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these f x from the equat b) -5 Two adjacent sid square	1 1 tion $2x - 3 = x + 2$ c) 1	re equal. The name of the	
28.	a) L.H.S= b) L.H.S; c) Can,t s d) None of Find the value of a) 5 Assertion (A) – quadrilateral is Reason (R) – a s	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these f x from the equat b) -5 Two adjacent sid square square is a quadra	1 1 tion $2x - 3 = x + 2$ c) 1 des of a rectangle ar	re equal. The name of the ight angles	(1)
28.	a) L.H.S= b) L.H.S; c) Can,t s d) None of Find the value of a) 5 Assertion (A) – quadrilateral is Reason (R) – a s a) Both A and R	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these f x from the equat b) -5 Two adjacent sid square square is a quad are true and R is	1 1 tion $2x - 3 = x + 2$ c) 1 des of a rectangle ar rilateral with four r	re equal. The name of the ight angles on of A	(1)
28.	a) L.H.S= b) L.H.S; c) Can,t s d) None of Find the value of a) 5 Assertion (A) – quadrilateral is Reason (R) – a s a) Both A and R	= R.H.S for $x =$ \neq R.H.S for $x =$ gay of these f x from the equat b) -5 Two adjacent sid square square is a quad are true and R is are true but R is p	1 1 tion $2x - 3 = x + 2$ c) 1 des of a rectangle ar rilateral with four r the correct explanation	re equal. The name of the ight angles on of A	(1)
	 a) L.H.S= b) L.H.S= c) Can,t s d) None of Find the value of a) 5 Assertion (A) – quadrilateral is Reason (R) – a s a) Both A and R b) Both A and R 	= R.H.S for $x =$ \neq R.H.S for $x =$ say of these f x from the equation b) -5 Two adjacent sides square square is a quadratic set of the set of	1 1 tion $2x - 3 = x + 2$ c) 1 des of a rectangle ar rilateral with four r the correct explanation	re equal. The name of the ight angles on of A	(1)

	Reason (\mathbf{R}) – The value of the variable which makes left hand side equal to right hand side in the given equation is called the solution or the root of the equation	
	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	
31.	Solve for x $\frac{5}{2}x - 14 = x + 2$	(2)
32.	Find the number of sides of a regular polygon whose each exterior angle is 72°	(2)
33.	See the following pattern:	(2)
	1,2, 3, 4	
	[Two non square numbers between the two square numbers 1 ($=1^2$) and 4($=2^2$)]	
	4,5, 6, 7, 8, 9	
	[Four non square numbers between the two square numbers 4 ($=2^2$) and 9($=3^2$)]	
	$9,10, 11, 12, 13, 14, 15, 16 (= 4^2)$	
	[Six non square numbers between the two square numbers 9 $(=3^2)$ and 16 $(=4^2)$]	
	16,17, 18, 19, 20, 21, 22, 23, 24, 25 (= 52)	
	[Eight non square numbers between the two square numbers $16 (=4^2)$ and	
	25(=5 ²)]	
	From the above pattern, Find that non square numbers between x^2 and $(x+1)^2$	
34.	State true or false. Justify your answer using any one example.	(2)
	(i) A cube of a number end with two zeros.	
	(ii) If square of a number ends with 5, then its cube ends with 25.	
	SECTION – C	
35.	Find the smallest number by which each of the following numbers must be	(3)
	multiplied to obtain a perfect cube.	
	(i) 243 (ii) 72	
36	Simplify the linear equations $5(p-9) - 2(p+9) + 5(p+4) = 0$, find the value of p.	(3)
37	Define rational number. Show that rational numbers are not closed under division.	(3)
	Give one example.	

38	In the parallelogram PQRS, given if $m \angle Q = 110^{\circ}$, find all the other angles.	(3)
	$P $ 110° Q R	
39	A die is labelled using the letters of the word "INDIAN". If this die is rolled, find	(3)
	the probability of getting following letters on its upper face.	
	a) I b) A c) P	
40	Is 2352 a perfect square? If not, find the smallest multiple of 2352 which is a	(3)
	perfect square. Find the square root of the new number.	
	SECTION – D	
41	Simplify $\left(\frac{30}{12} + \frac{5}{3}\right) - \left(\frac{25}{12} - \frac{7}{4}\right) + 1$	(4)
42	Simplify and solve the following linear equations.	(4)
	(i)0.25(4f - 3) = 0.05(10f - 9)	
	$(ii)\frac{x}{2} + \frac{5}{7} = \frac{x}{4} + \frac{1}{7}$	
43	Radha Draw a polygon on the floor, using a piece of chalk. (In the figure, a	(4)
	pentagon ABCDE is shown)	
	Radha want to know the total measure of angles, i.e, $m \angle 1 + m \angle 2 + m \angle 3 + m \angle 4 + m \angle 4 + m \angle 3 + m \angle 4 + m \angle 4 + m \angle 3 + m \angle 4 + m + m \angle 4 + m \angle 4 + m \angle 4 + m + m + m + m + m + m + m + m + m +$	
	$m \angle 5$. Starting at A. Radha Walks along AB. On reaching at B, she turn through an	
	angle of $m \ge 1$, walking along BC she reached at C, again she turns through an	
	angle of $m \angle 2$ to walk along CD. She continues to move in this manner, until	
	returns to side AB. she would have in fact made one complete turn.	
	E C A B B	
	(i) give the sum of all exterior angles $(m \angle 1 + m \angle 2 + m \angle 3 + m \angle 4 + m \angle 5)$	
	(ii). if $m \angle 2 + m \angle 3 + m \angle 4 = 216^{\circ}$, find the sum of $m \angle 1$ and $m \angle 5$.	

	(iii) if each exterior angle	e are 72^0 ,find each i	interior angle.	
	(iv) Draw all possible dia	agonals in given per	ntagon ABCDE?	
44	On a particular day, the sales (in rupees) of different items of a baker's shop are given below.			
	Food item	Sales(In Rs.)		
	ordinary bread	320		
	fruit bread	80		
	cakes and pastries	160		
	biscuits	120		
	others	40		
	Total	720		
	(i)Tabulate the data in terms of "In Fraction" and "Central Angle"			
	(ii)Draw a pie chart for this data.			
45	Find the cube root of eac	h of the following n	umbers by prime factorisation	(4)
	method.			
	(i) 27000 (ii) 150	525		
46	Find the square roots of	5776 and 70 56 by t	he method of long division method.	(4)