



# Summer Fields School

KAILASH COLONY, NEW DELHI-110048

Roll No.										
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- Please check that this questionnaire contains 8 printed pages.
- Please check that this questionnaire contains 24 questions in part 1 and 11 questions in part 2.

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## 35th ARYABHATTA INTER-SCHOOL MATHS COMPETITION 2018

### CLASS V

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Time Allowed: 2Hrs.

Max.Marks : 100

#### GENERAL INSTRUCTIONS:

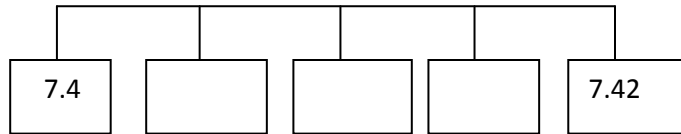
1. *Participant should not write his/her name on the questionnaire*
2. *Write your Roll no. on all pages of the paper.*
3. *All questions are compulsory.*
4. *Read questions carefully, think twice before you write the answer.  
Another copy of the questionnaire will not be provided.*
5. *Marks are indicated at the end of each question.*
6. *Write the answer within the prescribed limited space.*
7. *Do your rough work on a sheet pinned up with the questionnaire.*
8. *Overwriting is not allowed.*

**Part - 1**

Q1. Complete the following pattern: (2)

24, 6, 18, 9, 36, 9, 24, \_\_\_\_\_

Q2. Fill in the blanks with correct decimal numbers (2)



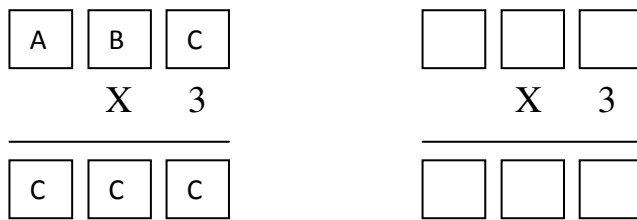
Q3. The sum of two numbers is 36 and their HCF is 4. Number of such pairs possible is \_\_\_\_\_ (2)

Q4. The largest possible number which when rounded to 1 decimal place becomes 85.8 is \_\_\_\_\_ (2)

Q5. The factors of a number are 1, 2, 3, 6, 13, 26, 39 and \_\_\_\_\_. The missing factor is \_\_\_\_\_ (2)

Q6. Number of thirds that will make 5 is \_\_\_\_\_ (2)

Q7. Fill in the blanks with the numbers represented by A, B and C in the given question: (2)



Q8. 35 Hectometre – 250 metre + 3 decimetre = \_\_\_\_\_ metre. (2)

Q9. The product of 3 consecutive numbers is 336. The three numbers are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_ (2)

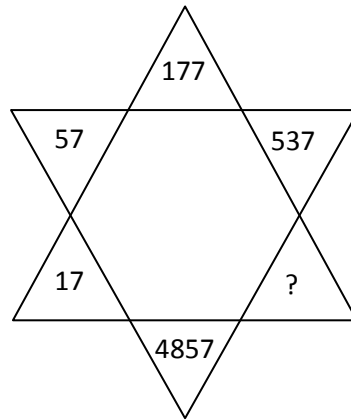
Q10. In a music reality show, the winner received 57% of the total votes and won the contest by 42,000 votes. The total number of votes polled is \_\_\_\_\_ (2)

Q11. The sum of numerator and denominator of a fraction is 14. If one is added to the numerator and 3 is subtracted from denominator it becomes 1. The fraction is \_\_\_\_\_. (2)

Q12. Two reciprocal numbers such that one is 144 times the other are \_\_\_\_\_ and \_\_\_\_\_ . (2)

Q13. A teacher wants to select a class monitor and a green brigade monitor among 8 students. The number of different ways the teacher can do so is \_\_\_\_\_. (2)

Q14. Look at the given figure and complete the pattern: (3)



The missing number is \_\_\_\_\_.

Q15. Naman and Manan started solving a fixed number of questions everyday. Naman started on 1<sup>st</sup> February and solved six questions everyday. On 20<sup>th</sup> February Manan had done 80 questions and by 25<sup>th</sup> February he had done 130 questions. The number of questions Naman would have solved on the day Manan started practicing is \_\_\_\_\_. (3)

Q16. The cost of a pen is ₹ 12 where as a copy costs ₹ 4 more than the pen. A shopkeeper paid ₹ 14, 716 for some pens and copies. If he bought 83 more pens than the copies, then the number of copies bought by him is \_\_\_\_\_. (3)

Q17. A baker baked some cookies. He tried to pack them in boxes of 6, 8 or 12 cookies each but everytime one cookie was left. When he packed 13 cookies in a box, nothing was left.

The least number of cookies that he could have baked is \_\_\_\_\_ . (3)

Q18. Solve the following:

$$\text{MMDLX} + \overline{\text{VIII}}\text{CMLXXV} \div \text{XXV} = \underline{\hspace{2cm}}. \quad (3)$$

Q19. Three cars travelling at a speed of 90 km/hr, 80 km/hr and 70 km/hr respectively start from the same place and at same time to catch up with a camel cart. The first car caught up with the camel cart after 6 hours and the second one was able to catch up with the camel cart after 8 hours. The time taken by the third car to catch up with the camel cart was \_\_\_\_\_ . (3)

Q20. A bag has 23 kg of rice more than a jar of rice. After shifting 5.8 kg of rice from the jar into the bag, the weight of rice in the bag becomes three times the weight of rice in the jar. Quantity of rice left in the jar is \_\_\_\_\_ . (3)

Q21. Dhruv brought some chocolates for 36 of his friends. Some of his friends took one chocolate each but a fourth of the remaining friends took four chocolates each and there were no more chocolates left with him.

The number of chocolates he brought was \_\_\_\_\_ . (3)

Q22. 30% of the toys in a shop are balls. The number of bats in the shop is  $\frac{3}{5}$  of the balls. The number of dolls is  $1\frac{4}{6}$  times the number of bats. There are 20 more cars than the bats in the shop. Total number of toys in the shop is \_\_\_\_\_ . (3)

Q23. The average marks secured by a group of students is 28. A new student joins the group who secured 43 marks, the average marks of the group become 31. The number of students in the group in the end is \_\_\_\_\_ . (3)

Q24. Look at the given time-table and answer the following questions:

(4)

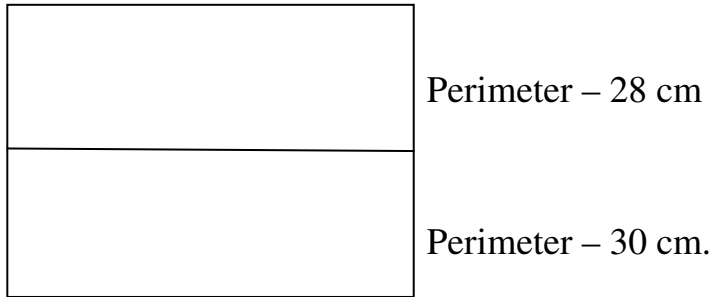
STATION		TRAIN I	TRAIN 2	TRAIN 3
Mckinsey Lane	A	2010	1315	-----
	d	2015	1320	1135
Old Ford Station	a	2317	1611	1410
	d	2335	1615	1420
Stratford Station	a	0135	1917	1825
	d	0138	1920	1840
Pudding Lane	a	0455	2240	2155
	d	0505	2244	2220
Olympic Centre	a	0640	2341	0235
	d	-----	2345	0241

- a) The fastest train going from Old Ford to Pudding Lane - \_\_\_\_\_
- b) The train that takes shortest time from Mckinsey Lane to Stratford Station- \_\_\_\_\_.
- c) The fastest train from Mckinsey Lane to Olympic Centre - \_\_\_\_\_.
- d) The train that takes the longest time from Stratford Station to Olympic Centre \_\_\_\_\_.

**Part II –Geometry**

**Note- The diagrams are not made to scale**

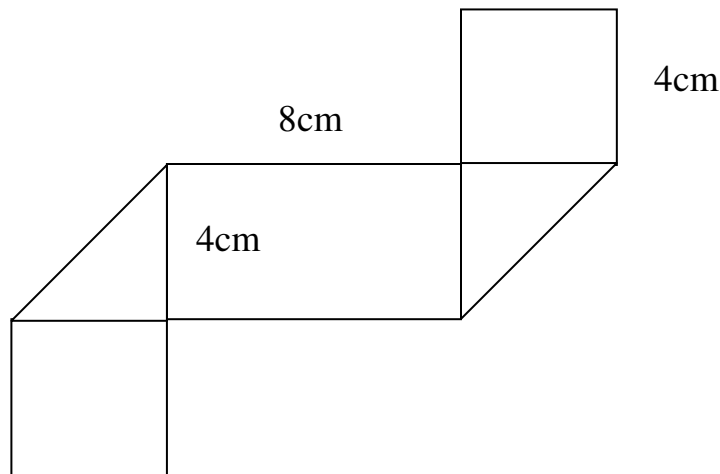
Q1. A rectangle with a perimeter of 34 cm was divided into smaller rectangles with perimeter 28 cm and 30 cm respectively. (2)



The area of the big rectangle is \_\_\_\_\_.

Q2. Two 7 cm by 7 cm quadrilaterals overlap to form a 7cm by 9 cm rectangle. The area of the region where the two quadrilaterals overlaps \_\_\_\_\_ (3)

Q3. A rectangle is folded at the corners as shown in the following diagram:



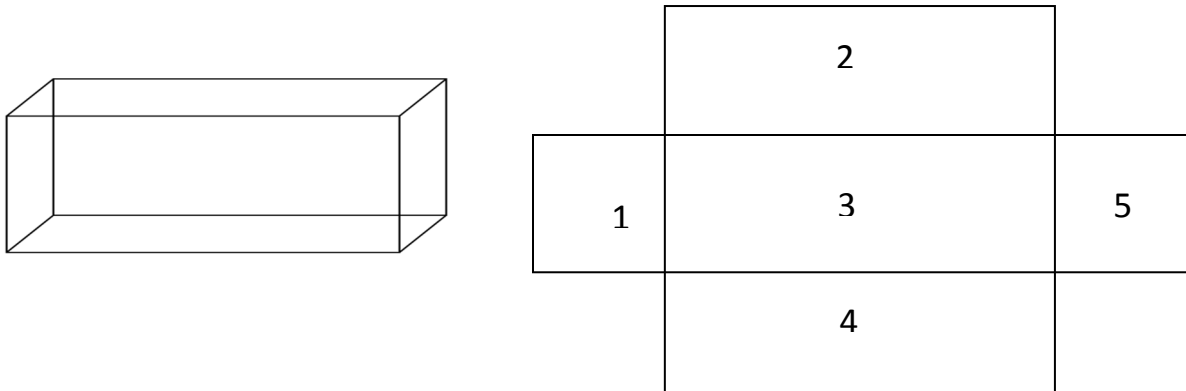
The perimeter of the original rectangle is \_\_\_\_\_ (3)

Q4. The wheels of a moving truck have a radius of 42cm. They are rotating at a rate of 800 rotations per minute. The speed of the truck in km/hr = \_\_\_\_\_ (3)

Q5. There are 10 points on a circle. Number of straight lines that can be drawn using any of the 2 points is \_\_\_\_\_ (3)

Q6. Look carefully at the net of the open box shown below:

(3)

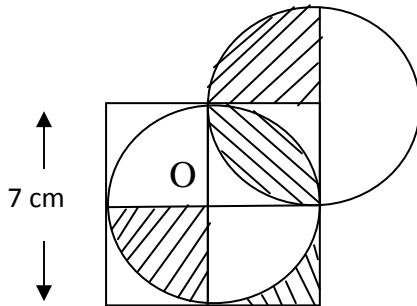


The total perimeter of square faces 1 and 5 is 128 cm and the area of face 4 is 288 sq.cm.  
The volume of this box is \_\_\_\_\_.

Q7. Cubes each having an edge of 8 cm are cut from a wooden block measuring 120 cm by 80 cm by 60 cm. The volume of all the cubes that are cut from the block is \_\_\_\_\_.

(3)

Q8. Look at the given figure carefully and answer the following:



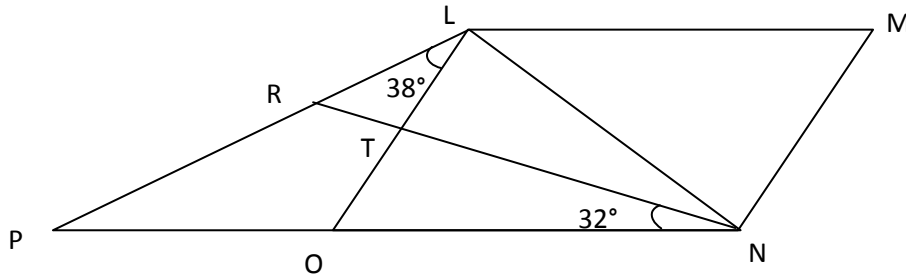
Given O is the centre of the circle. The perimeter of the shaded part is \_\_\_\_\_.

(3)

Q9. A tank with a base measuring 40cm by 20cm is  $\frac{3}{4}$  filled with water. When 16 litres of water is added, the tank becomes  $\frac{7}{8}$  full. The height of water in the tank when it is  $\frac{5}{8}$  full is \_\_\_\_\_.

(3)

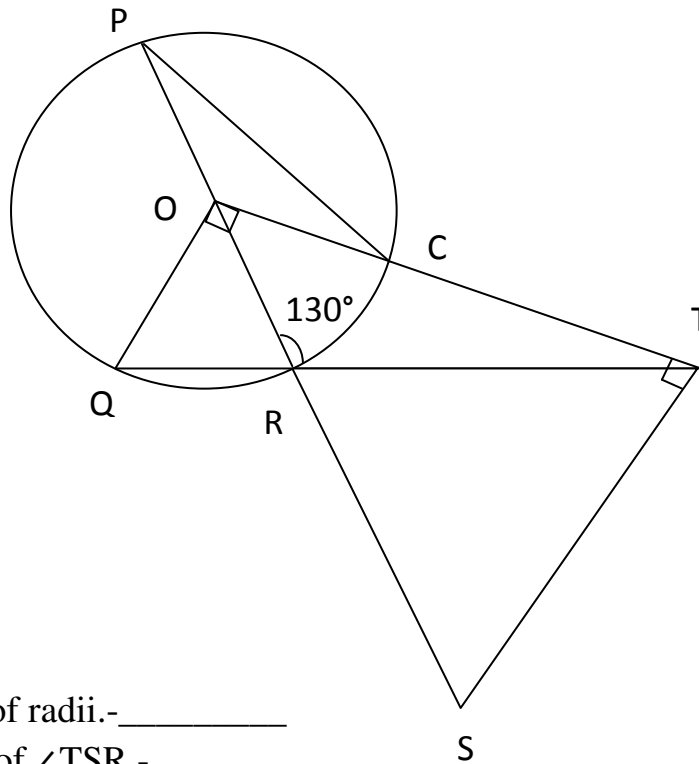
Q10. Look at the given figure and answer the following questions:



Given, LMNO is a rhombus and  $NT = LO$ . Find:

- a) The measure of  $\angle LON =$  \_\_\_\_\_ (1.5)
- b) The measure of  $\angle OLN =$  \_\_\_\_\_ (1.5)
- c) The sum of angles of polygon LRTONM = \_\_\_\_\_ (1)

Q11. Look at the given figure and answer the following questions:



- a) Number of radii.- \_\_\_\_\_ (1)
- b) Measure of  $\angle TSR =$  \_\_\_\_\_ (2)
- c) Measure of  $\angle OPC =$  \_\_\_\_\_ (2)
- d) Name a pair of parallel lines - \_\_\_\_\_ (1)
- e) Shade a major segment - \_\_\_\_\_ (1)
- f) Name a pair of vertical angles - \_\_\_\_\_ (1)
- g) Number of chords - \_\_\_\_\_ (1)
- h) Name a pair of linear angles- \_\_\_\_\_ (1)