Summer Fields School
KAILASH COLONY, NEW DELHI-110048

Roll No.

- Please check that this questionnaire contains 9 printed pages.
- Please check that this questionnaire contains 23 questions in part 1 and 13 questions in part 2.

36th ARYABHATTA INTER-SCHOOL MATHS COMPETITION 2019

CLASS V

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. The largest number which always divides the sum of any pair of consecutive even numbers is .... (2)

Q2. There are four prime numbers written in ascending order. The product of first three is 385 and that of last three is 1001. The product of all these prime numbers is............. (2)

Q3. Shanaya gave $\frac{1}{9}$ of her chocolates to her sister and the remaining to her brothers to be equally divided among them. If the share of each brother is four times that of the sister, the number of her brothers is .... (2)

Q4. Divide 90 into 4 parts such that when 2 is added to the first part, 2 is subtracted from the second part, 2 is multiplied with the third part and the fourth part is divided by 2, then all the four results are the same number. The four parts are ...., ..., ... and .... (2)

Q5. Look at the series, and fill in the blank :

X ,XXII,XLVI , ____ , CXC (2)

Q6. Look at the figure and find the missing number.
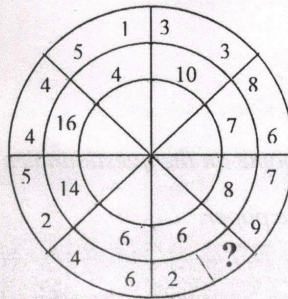
The missing number is _____. (2)

Q7. Two different pots were sold at ₹ 910 each. One of the pot was sold at a profit of 30%, whereas the other was sold at a loss of 30%. The difference in the cost price of both the pots is .... (2)

Q8. The fraction which is located exactly midway of $\frac{1}{10}$ and $\frac{1}{100}$ on a number line is .... (2)

Q9. The average marks scored by Naman and Dhruv are 1085. The average marks scored by Manik and Dhruv are 1015. If Manik scored 658 marks, then the marks scored by Naman are …………… (2)

Q10. A number is $\frac{9}{17}$ of another number. On adding the larger number and three times the smaller number, the sum obtained is 9284.The two numbers are _____ and _____. (2)

Q11.A soft drink is made from 25 % sugar syrup and the rest soda water .A container contains some amount of soft drink, but by mistake 60 litres of soda water was added to it. The amount of sugar syrup which must be added to correct the mistake, so that the container would again contain soft drink with 25% sugar syrup is _____. (3)

Q12. Two numbers lie between 115 and 142. The prime factorization of both the numbers is given below. In each of the prime factorization one of the prime factor is missing. Fill in the blanks with the missing factors.

First No. = 2 x 2 x 5 x _____

Second No. = 2 x 3 x 7 x _____

The difference of the two numbers is _____. (3)

Q13. Solve :

MMMCDXLVIII ÷ DCCCLXII + MMDCCCXLIX – MCDXCVIII = _____ (3)

Q14. A florist used 1895 flowers to decorate the entrance gate of a house. He then used $\frac{3}{8}$ of the remaining flowers to make table decorations. With $\frac{1}{5}$ of the remaining flowers, he made a garland. He is now left with 80 flowers. The number of flowers he had in the beginning was .... (3)

Q15. A jar, 0.32 filled with rice has a mass of 720g. When the jar is half full, it has a mass of 900g. The mass of the jar when it is 0.42 full is .... (3)

Q16. In a recent survey, 25% houses contained two or more people. Of those houses containing only one person, 20 % were having only a male. The percentage of all houses which contain exactly one female and no males is …………………….. (3)

Q17. A 3-digit number has a remainder 3 when divided by 5. The remainder is 5 when it is divided by 7. When 2 is added to this number it becomes completely divisible by 9. The smallest such a 3-digit number is …………………….. (3)

Q18. In the first hour, Rohan painted 60% of the wall and Vinay painted 20% of the remaining wall. In the next hour Rohan painted $87\frac{1}{2}$ % of the remaining wall and rest was done by Vinay. The percent of wall painted by Vinay is _____. (3)

Q19. Mr. Kapoor and Mr. Arora went to Jaipur by car. Mr. Kapoor travelled from Delhi to Jaipur at an average speed of 50 km/hr. Mr. Arora took 4 hours to travel the same distance. Both stopped at Rajasthan Toll plaza at 1:00 pm. Mr. Arora reached Jaipur at 2:00pm. If the Toll plaza was 100 km away from Jaipur , the time at which Mr. Kapoor started from Delhi is ……………… (3)

Q20. The number of different seven digit numbers divisible by 11 that can be made from the given digits are _____.

6   7   8   1   5   0   4

Note - Each digit can only be used once in each number. (3)

Q21. The average marks of 12 students in a class increase by 4 marks when the marks of two students who scored 48 and 52 marks are replaced by marks obtained by two new students. The average marks of the two new students is _____. (3)

Q22. Sumit has 4 boxes. One box has 21 marbles, the second box has 26 marbles, the third box has 17 marbles and the fourth box has 96 marbles. He adds the same number of marbles in all boxes and finds that the total of marbles in the first three boxes becomes equal to the number of marbles in the fourth box. The least number of marbles that he puts in each of the box is _____.   (3)

Q 23. Look at the given Time Table and answer the following questions :   (4)

Station	Train A	Train B	Train C
Stanford	a. 0745 d. 0747	a. - d. 1145	a. 1429 d. 1434
Kingston	a. 1023 d.1028	a. 1521 d. 1523	a. 1727 d. 1730
Mcknight	a. 1301 d. 1303	a.1847 d.1853	a. 2005 d.2012
Stephan Square	a. 2009 d. 2014	a. 2312 d. 2318	a. 0010 d. 0015

a) Train taking shortest time to reach Stephan Square from Kingston..............

b) Fastest train to reach Mcknight from Stanford..........

c) Train taking longest time to reach Kingston from Stanford...............

d) Fastest train from Kingston to Mcknight..........

Part II – Geometry

Note- The diagrams are not made to scale

Q1. A boy started from his home on a cycle. After cycling for 5 km towards west, he turned left. Then he cycled for 8 km, turned right and cycled for another 10 km. Then, he took a 45° turn in clockwise direction. The direction he is facing now is .... (2)

Q2. The number of straight lines that can be obtained by joining any two vertices of a heptagon is .... (2)

Q3. A rectangular pond is 250m long , 100 m wide and 20 m deep. If 50,000 liters of water evaporates, the change in the water level is .... (2)

Q4. Look at the given figure and find it's perimeter.
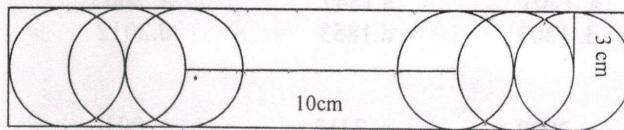
The perimeter of the figure is .... (2)

Q5. If O is the center of the circle, the fraction of the circular shaded region is

.... (2)
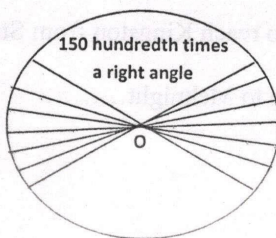
Q6. A gardener has made identical rectangular beds for growing different flowers as shown below in the given figure. He is going to grow Tulips in the shaded area. The total area in which he will grow Tulips is _____.   (2)
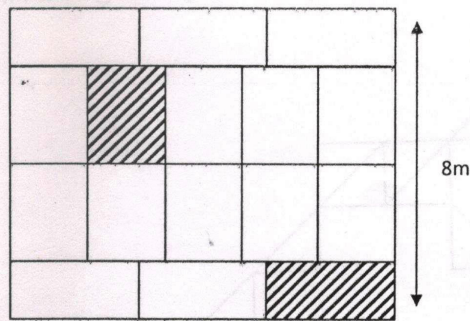
Q7. Aahana purchased a rectangular aquarium and filled it with some water. The water reached up to the brim when she placed identical cubical stones inside the aquarium taking care to see that none of the stones overlapped. When she removed three stones the water level dropped by 1.5cm leaving 94% of the capacity of the aquarium filled. When all the cubes were removed, the volume of the water dropped to 88% of the capacity of aquarium leaving 5500cu.cm of water in the aquarium. The area of the base of aquarium covered by cubes is

_____.   (3)

Q8. Look at the given figure and find answer the following question:
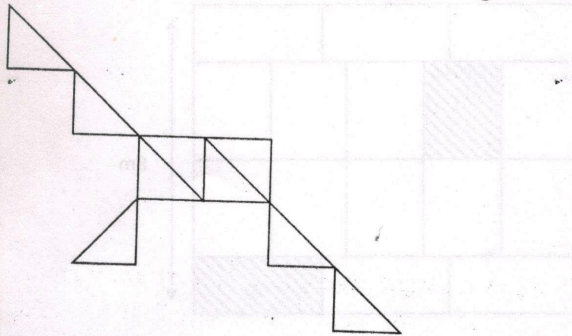
Note: LMSU, MTSR and NQPO are rhombus.
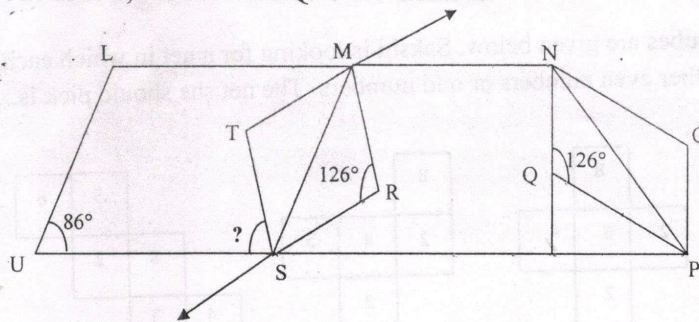
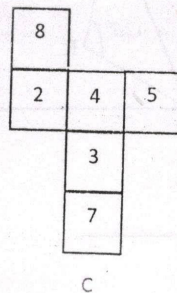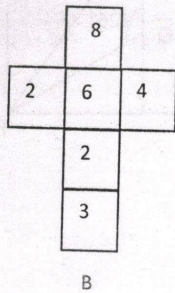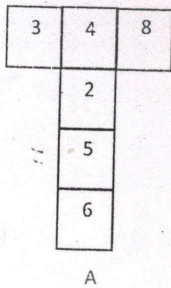Measure of ∠TSU = _____   (2)

Q9. The figure given below is made up of identical right angled triangles. The base of each triangle is 18cm and height is 15cm. The total area of the given figure is .... (3)

Q10. Mr. Shankar has 6 big square tiles in his bathroom. He wants to replace the bigger square tiles with smaller square tiles. The side of the smaller tiles is $\frac{1}{5}$ of the side of the bigger tiles. The number of such smaller tiles needed to replace the bigger tiles is _____ (3)

Q11. The area of one face of a cube is equal to 64 sq.cm. The surface area of 64 such cubes joined together to make one big cube is _____. (3)

Q12. The nets of four cubes are given below. Sakshi is looking for a net in which each of the opposites faces have either even numbers or odd numbers. The net she should pick is............ (3)
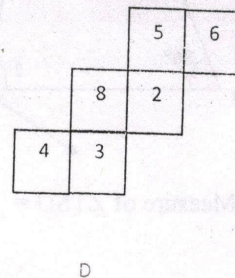
Q13. Look at the given figure and answer the following questions:

Given - ABCD is a parallelogram, and D is the centre of the circle.
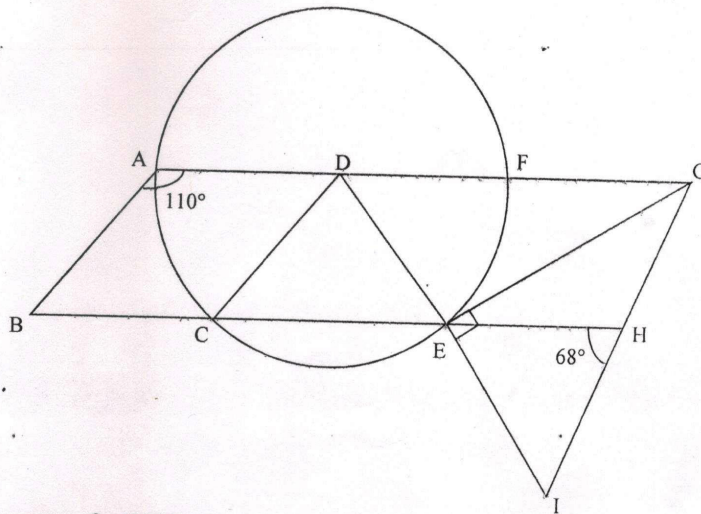
i.   Measure of ∠GEH = _____   (2)
ii. Measure of ∠DGI = _____   (2)
iii. A pair of parallel lines = _____ and _____   (1)
iv. Number of radii = _____   (1)
v.   A pair of linear angles = _____ and _____   (1)
vi. Shade a major segment   (1)
vii. Name an isosceles triangle. _____   (1)
viii. A pair of complimentary angles = _____ and _____ (1)
ix. Number of chords = _____   (1)