

## MATHEMATICS OLYMPIAD COMPETITION 2016 SELECTION TEST FOR PROVINCIAL LEVEL TRAINING POOL

### General Instructions.

- Answer all **20** questions.
- Write the answer on the dotted line given under each question and it is necessary to mention the relevant units if any with the answer.
- Diagrams are not to scale.

Index No : .....

School : .....

Grade :

**Time : 01 hour**

01. What is the value of  $10 \times 10 + 10 \div 10$

Answer : .....

02. Amal collects twice as many balls as Kamal and it is five more than Sampath. If they collected 35 balls in total, how many balls Amal collected?

Answer : .....

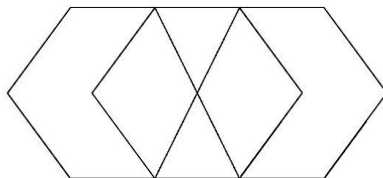
03. If,  $a + b = 32$ ,  $b + c = 19$  and,  $a + c = 17$ , Find the value of  $a + b + c$ .

Answer : .....

04. A spider has 8 legs. A Dragonfly has 6 legs. There are 66 spiders and dragonflies altogether. There are 450 legs in all. Find the number of spiders.

Answer : .....

05. How many hexagons are there in the diagram?



Answer : .....

06. Amal, Kamal, Nimal and Wimal have their 12<sup>th</sup>, 15<sup>th</sup>, 14<sup>th</sup> and 15<sup>th</sup> birthdays on 30<sup>th</sup> January 2016. In what year will the total of their ages be 100?

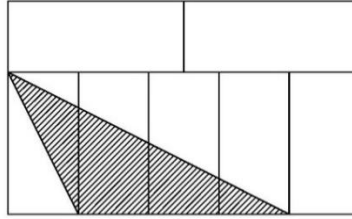
Answer : .....

07. Two numbers in  $4 \times 4$  grid can be interchanged in order to create a magic square ( in which all rows, all columns and both main diagonals add to the same total). What is the sum of these two numbers.

9	6	3	16
4	13	10	5
14	1	8	11
7	12	15	2

Answer : .....

08. The largest rectangular shown below is made of 7 identical rectangles. What fraction of the area is shaded?



Answer : .....

09. The equation  $123456789 \times 8 = 987654321$  is correct when the two digits of the result are in a different order. What is the sum of that two digits?

Answer : .....

10. If the fraction  $\frac{2637}{18459}$  simplifies to  $\frac{1}{7}$  what is the simplest form of the fraction  $\frac{5274}{36918}$ ?

Answer : .....

11. How many whole numbers from 1 to 200 do not have the digit 2?

Answer : .....

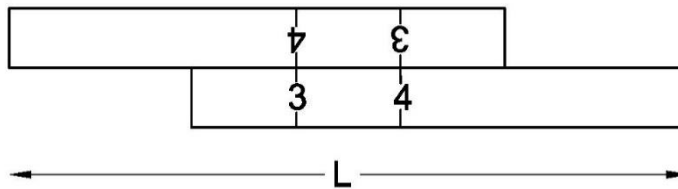
12. The product of the digits in 176 is 42. Other than 176 how many such three digit numbers that the product of digits is 42?

Answer : .....

13. How many ways can you arrange by only changing the places of 3 different mathematics books and 2 different science books on the rack such that science books must be the first and last?

Answer : .....

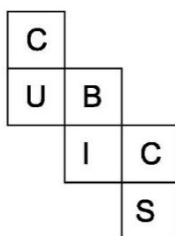
14. Two identical rulers are placed together as shown. Each ruler is exactly 10cm long and is marked in centimeters up to 10. The 3cm mark on each ruler is aligned with 4cm mark on the other.



The overall length is L, what is the value of L?

Answer : .....

15. If the figure shown below is folded to make a cube, then what is the letter opposite the S?



Answer : .....

16. If  $63 \times N = A^2$  and A,N are positive integers, find the least possible value for A.  
 ( $A^2 = A \times A$ ).

Answer : .....

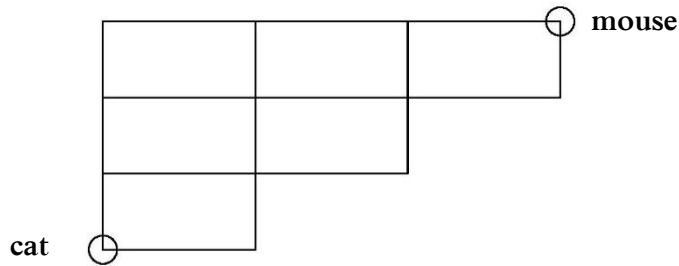
17. 
$$\begin{array}{r} A \ B \ C \\ + \ B \ C \ A \\ \hline 7 \ 1 \ 9 \end{array}$$
 Find the values of A, B and C.

Answer : A = ..... B = ..... C = .....

18. 4 digit number  $37xy$  is divisible by 2,3,4,5 and 9. Find the values of  $x$  and  $y$ .

Answer :  $x = \dots\dots y = \dots\dots$

19. In how many ways the cat reaches the mouse by moving along the lines up and right only.



Answer : .....

20. The rent of a building increasing pattern as bellows. What will be the rent for 2023?

Year	Rent (Rs.)
2012	12 000.00
2013	15 000.00
2014	19 000.00
2015	24 000.00

Answer : .....