CRPF PUBLIC SCHOOL, ROHINI

First Intra School Mathematics Olympiad 2010

CLASS VIII

Max. Marks: 60 **Time: 1 hour 30 minutes**

General Instructions:

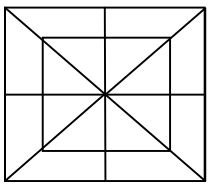
1. Each question of Section A (Q1-5) carries 2 marks, that of Section B (Q6-15) carries 3 marks and of Section C (Q16-20) carries 4 marks.
2. Each question has five choices (A, B, C, D or E). Select the correct answer to each question and darken the corresponding circle in the Answer Sheet provided to you. For each correct answer in section A, B and C, two, three and four marks will be awarded respectively. **One mark will be deducted for each incorrect answer (of all the sections), while no mark will be deducted for any unattempted question.** Darkening of more than one circle for any answer shall bear zero mark.
3. Darken the correct circle with HB Pencil ONLY.
4. Do not make any stray marks on the answer sheet and do not use it for any kind of Rough Work.

SECTION - A

Q1. A lady runs 12 km towards North, then 6 km towards South and then 8 km towards East. How far is she from her starting point and in which direction?

(A) 5 km North East
(B) 5 km East
(C) 10 km North East
(D) 10 km West
(E) None

Q2. How many triangles are there in the figure given below?



(A) 28
(B) 24
(C) 36
(D) 32
(E) None

Q3. The total number of surfaces having the same area in cuboids is:

(A) 6
(B) 2
(C) 4
(D) 3
(E) None

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Q4. Priya is ranked 5th in a class of 53 students. What is her rank from the bottom in the class?

(A) 49th
(B) 48th
(C) 47th
(D) 50th
(E) None

Q5. Which number will come in the place of the question mark?

0.16 : 0.0016 :: 1.02 : ?

(A) 10.20
(B) 0.0102
(C) 0.102
(D) 1.020
(E) None

SECTION - B

Q6. If $2009 = p^a.q^b$, where p and q are prime numbers, then what is the value of $p+q$?

(A) 3
(B) 48
(C) 51
(D) 2009
(E) None

Q7. Which of the following sum is equal to 2003?

(A) $16^2+26^2+32^2$
(B) $16^2+26^2+33^2$
(C) $15^2+27^2+32^2$
(D) $14^2+25^2+33^2$
(E) None

Q8. $(-1)^1+(-1)^2+(-1)^3+.....+(-1)^{98}+(-1)^{99}$ is equal to:

(A) -1
(B) 0
(C) 1
(D) -99
(E) None

Q9. $(10x)^{100} = (10x^{100})(?)$

(A) 1
(B) 10
(C) 10^{99}
(D) 10^{100}
(E) 100

Q10. If $0<x<1$, then the value of $x+\frac{1}{x}$ is:

(A) >2
(B) >4
(C) <2
(D) <4
(E) None

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Q11. If 72K is a perfect cube, then the value of "K" is:

(A) 1
(B) 2
(C) 3
(D) 4
(E) None

Q12. Square root of $\frac{0.081}{0.0064} X \frac{0.484}{6.25} X \frac{2.5}{12.1}$ is:

(A) 0.45
(B) 0.75
(C) 0.95
(D) 0.99
(E) None

Q13. The value of $4-\frac{5}{1+\frac{1}{3+\frac{1}{2+\frac{1}{4}}}}$ is:

(A) $\frac{40}{31}$
(B) $\frac{4}{9}$
(C) $\frac{1}{8}$
(D) $\frac{31}{40}$
(E) None

Q14. If the length and the breadth of a rectangle were increased by 10% each, then the area of that rectangle is increased by:

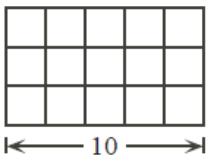
(A) 10%
(B) 20%
(C) 21%
(D) 100%
(E) None

Q15. A dealer marks his goods 20% above the cost price. He then allows some discount on it and makes a profit of 8%. The rate of discount is:

(A) 4%
(B) 6%
(C) 10%
(D) 12%
(E) None

SECTION - C

Q16. In the diagram, the rectangular wire grid contains 15 identical squares. The length of the rectangular grid is 10 cm. What is the length of wire needed to construct the grid?



(A) 60
(B) 70
(C) 120
(D) 66
(E) 76

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Q17. The areas of three squares are 16, 49 and 169. What is the average (mean) of their side lengths?

(A) 8
(B) 12
(C) 24
(D) 39
(E) 32

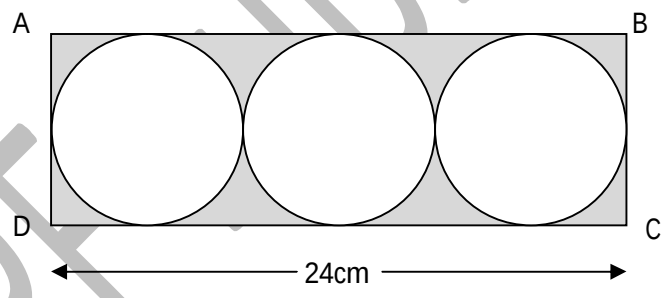
Q18. The number 'x' is multiplied by 0.5 and the product is divided by 3. The result is squared and 1 is added to it. The final result is 50. What is the value of the original number 'x'?

(A) 42
(B) 30
(C) 24
(D) 18
(E) None

Q19. If $\frac{x^2+*+1}{x+y}$ is equal to $x-y+\frac{1}{x+y}$ whenever $*=$.....

(A) $-y^2$
(B) xy
(C) y^2
(D) $-xy$
(E) None

Q20. In the diagram, ABCD is a rectangle, and three circles are positioned as shown. The area of the shaded region, rounded to the nearest cm², is:



(A) 41
(B) 43
(C) 45
(D) 47
(E) None

NOTE: The **answer key** of this question paper will be available on the School's blog www.crpfpsrohini.blogspot.com on November 9, 2010 after 6 pm. The **Result** will be declared on 16 November and will also be available on the school's blog.

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