CRPF PUBLIC SCHOOL, ROHINI

SECOND Intra School Mathematics Olympiad 2011

CLASS VII

Max. Marks: 50 **Max. Time: 1 hour 30 minutes**

General Instructions:

1. Q1-15 (Section A) each MCQ carries 2 mark. 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. **THERE IS NO NEGATIVE MARKING.** Marking of more than one circle for an answer shall be awarded zero mark.
2. Q16-20 (Section B) each question carries 4 mark. You are to give the complete solution. Marking will be done stepwise.

SECTION - A

1) The integer 287 is exactly divisible by

(A) 3 (B) 4 (C) 5 (D) 7 (E) 6

2) If a machine produces 150 items in one minute, how many would it produce in 10 seconds?

(A) 10 (B) 25 (C) 20 (D) 15 (E) 303)

3) The floor of a rectangular room is covered with square tiles. The room is 10 tiles long and 5 tiles wide. The number of tiles that touch the walls of the room is

(A) 26 (B) 50 (C) 34 (D) 46 (E) 30

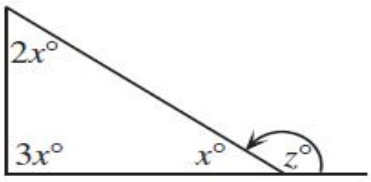
4) When a number is divided by 5, it gives a quotient of 4 with a remainder of 8. What is the number?

(A) 17 (B) 18 (C) 28 (D) 31 (E) 46

5) The product of two whole numbers is 30. The smallest possible sum of these two numbers is

(A) 9 (B) 10 (C) 11 (D) 14 (E) 25

6) In the diagram, the value of z is



(A) 150 (B) 180 (C) 60 (D) 90 (E) 120

7. Triangle *ABC* has its vertices at *A*(1, 0), *B*(5, 0) and *C*(5, 3). The area of the triangle, in square units, is

(A) 3 (B) 4 (C) 6 (D) 7 (E) 12

8. If $\frac{1}{2}$ of $\frac{2}{3}$ the twelve small squares in the given figure are removed, how many squares remain?

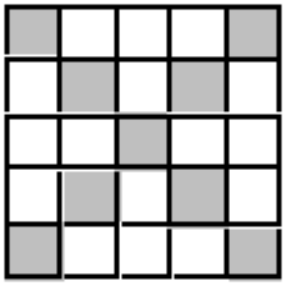
(A) 2 (B) 3 (C) 4 (D) 8 (E) 9

9. Four years ago today, Sakshi was 11 years old. In two more years, Sakshi will be

(A) 12 (B) 17 (C) 19 (D) 13 (E) 10

Q10 In the diagram, the percentage of small squares that are shaded is

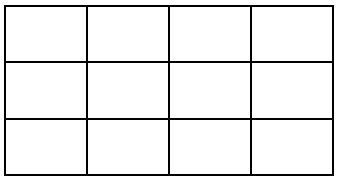
(A) 64 (B) 33 (C) 36 (D) 56.25 (E) 9



Q11. A box contains 1 red ball, 2 white balls and 3 black balls. Without looking, Arpit reaches in and chooses one ball at random. What is the probability that the ball *is not* red?

(A) 1 B) $\frac{2}{6}$ (C) $\frac{1}{6}$ (D) $\frac{4}{6}$ (E) $\frac{5}{6}$

12 In the given diagram, all 12 of the small rectangles are the same size. Your task is to completely shade some of the rectangles until $\frac{2}{3}$ of $\frac{3}{4}$ of the diagram is shaded. The number of rectangles you need to shade is



(A) 9 (B) 3 (C) 4 (D) 6 (E) 8

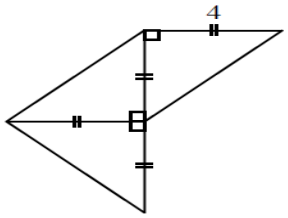
13. Into what geometric shape should you bend a piece of wire so that it will hold the maximum area?

(A) square (B) circle (C) rectangle (D) triangle (E) oval

14. The sum of three consecutive integers is 90. What is the largest of the three integers?

(A) 28 (B) 29 (C) 31 (D) 32 (E) 21

15. The area of the entire figure shown is



(A) 16 (B) 32 (C) 20 (D) 24 (E) 64

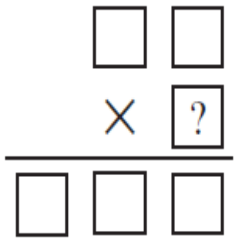
SECTION – B

16. Six points are spaced equally around a circle. How many different chords can be formed by joining any 2 of these points? (A chord is a straight line joining two points on the circumference of a circle.)

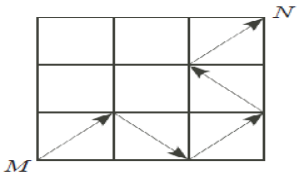
17. A bicycle travels at a constant speed of 15 km/h. A bus starts 195 km behind the bicycle and catches up to the bicycle in 3 hours. What is the average speed of the bus in km/h?

18. A movie theatre has eleven rows of seats. The rows are numbered from 1 to 11. Odd numbered rows have 15 seats and even-numbered rows have 12 seats. How many seats are there in the theatre?

19. The digits 1, 2, 3, 4, 5, and 6 are each placed in one of the boxes so that the resulting product is correct. If each of the six digits is used exactly once, the digit represented by ?



20. Kiran can draw a connected path from M to N by drawing arrows along only the diagonals of the nine squares shown. One such possible path is shown. A path cannot pass through the interior of the same square twice. In total, how many different paths can she draw from M to N?



NOTE: The **Solution Key** of this paper will be available on School's blog www.crpfpsrohini.blogspot.com today after 6 pm. The **Result** will be declared on 22 December (Date of Birth of Great Indian Mathematician Ramanujan) and will be available on School's blog.