

# Mathematical Aptitude

## Number System

### Application Based Questions

#### Q.1. Multiple choice questions:

**Directions:** Read the following questions and choose the answer that best answer the questions.

1. Value of  $\frac{1}{\sqrt{1} + \sqrt{2}} + \frac{1}{\sqrt{1} + \sqrt{3}} + \frac{1}{\sqrt{1} + \sqrt{4}} + \dots + \frac{1}{\sqrt{120} + \sqrt{121}}$  is  
(a)  $\sqrt{120}$  (b) 10 (c)  $12\sqrt{12}$  (d) 8
2. Mohan was feeding the animals at the zoo. He started at the monkey's cage. Then he walked down the hill 3 cages to feed the birds. The birds are in the first cage in the zoo. Then Mohan went up the hill 7 cages to feed the seals. From there he went down the hill 5 cages to feed the bears. Next he went up the hill 8 cages to the elephants. They are in the last cage in the zoo. Number of cages in the zoo is  
(a) 9 (b) 11 (c) 12 (d) 15
3. When a man went to visit a friend, he realized he had forgotten the apartment number. He does remember the apartment is on the first floor where the apartments are numbered 101 through 150. He also knows the apartment number is an even number and a multiple of 3 and 11. The correct apartment number is  
(a) 132 (b) 130 (c) 125 (d) 124
4. Sandeep was scared as he knocked on the door. A low voice said, "Before I open the door you must name the secret number." Here are some clues: it is greater than 275; it is less than 325; if you count by 5s you say its name; it can be divided evenly by 3 and 9. The secret number is  
(a) 310 (b) 315 (c) 316 (d) 320

**Q.2. Subjective questions:**

- 1.** There is Rs. 10000 in a school fund for a big dance. Tickets will be sold for Rs. 50 apiece. How many tickets, will need to be sold to cover the anticipated cost of Rs. 28000 for the band, the food, the decorations, and the publicity?

**Ans.** .....  
.....  
.....

- 2.** Deena works with baby animals at a zoo. This week he measured a giraffe, an ape, and a tiger. The tiger had grown 10 cm less than the giraffe. The giraffe had grown twice as much as the ape. The baby ape had grown 15 cm since it was measured the last time. How many inches had the tiger grown?

**Ans.** .....  
.....  
.....

- 3.** Rani and Swati are playing a game with a timer and three dice. Each player rolls three dice and uses the three numerals rolled to make 3-digit numbers. A numeral can only be used once in a number. Each number is worth 10 points. Swati rolls 3, 6, and 5. How many points can she earn?

**Ans.** .....  
.....  
.....

- 4.** At the amusement park, there is a ride through the Haunted House. Each boat holds 8 people, and there are 3 boats. The ride takes 10 minutes. There are still 150 people in the line, and the ride closes in exactly one hour. Will all the people be able to ride through the Haunted House?

**Ans.** .....  
.....  
.....