

# NavGurukul – Screening Test

## School Of Programming

### SOP - A

#### Instructions

- All questions are multiple-choice.
  - Choose only one correct answer for each question.
  - Mark the correct answer on the OMR sheet.
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**Q 1** 7, 12, 17, 22, \_\_\_\_\_. What will be the next number in the pattern?

- A) 30      B) 28      C) 29      D) 27

**Q 2** 36, 49, 64, 81, \_\_\_\_\_. What will be the next number in the pattern?

- A) 91      B) 100      C) 98      D) 121

**Q 3** 12, 23, 36, 51, 68, \_\_\_\_\_. What will be the next number in the pattern?

- A) 87      B) 83      C) 86      D) 90

**Q 4** 1, 8, 27, 64, 125, \_\_\_\_\_. What will be the next number in the pattern?

- A) 215      B) 225      C) 216      D) 256
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## Percentages

A percentage helps us understand how much a part is of the whole.

The word “percent” means “out of 100.”

For example, if a school has 50 students and 10 of them are unhealthy, then the percentage of unhealthy students will be:

$$\begin{aligned}\text{Percentage} &= (\text{Part} \div \text{Total}) \times 100 \\ &= (10 \div 50) \times 100 = 20\%\end{aligned}$$

**Now answer the following questions.**

**Q 5** I bought 180 apples, out of which 135 were fresh. What percentage of apples weren't fresh?

- A) 13%      B) 20%      C) 25%      D) 76%

**Q 6** Karuna bought 180 flowers, out of which 18 are roses. If she bought 36 more roses, then what is the % of roses?

- A) 25%      B) 28%      C) 20%      D) 26%

**Q 7** Arman has 260 red ribbons and 30 blue ribbons. How many blue ribbons should he buy so that the percentage of blue ribbons becomes 20%

- A) 20      B) 25      C) 30      D) 35
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## Work and Time:

For the next questions, think in a practical way. For example, if you can plant 100 trees in 1 hour, then in 4 hours you can plant:  $100 \times 4 = 400$  trees.

This means the work done increases with time.

**Using the same idea, answer the following questions.**

**Q 8** To fill 200 glasses of water, 10 taps take 18 min in total. Then, with 15 taps, how much time would be needed to fill 200 glasses of water?

- A) 10 min      B) 12 min      C) 14 min      D) 15 min

**Q 9** If to fill 80 glasses of water, 4 taps require 8 min in total. Then, to fill 160 glasses in 4 min, how many taps would you need?

- A) 4      B) 6      C) 8      D) 16

**Q 10** If to fill 120 glasses of water, 6 taps require 5 min in total. Then, with 40 taps to fill 480 glasses, how much time would be required?

- A) 2 min      B) 9 min      C) 3 min      D) 4 min
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## Linear Equations in Two Variables

Think of these questions like real-life situations. Two values are unknown. Use letters like  $x$  and  $y$  to represent them. Then use the given information to write an equation.

Example:

If the total cost of apples and oranges is ₹100, and apples cost ₹3 each while oranges cost ₹2 each, the equation can be written as:

$$3x + 2y = 100$$

**Now answer the following questions.**

- Q 11** A Red bus has 85 seats, whereas the Green bus has 65 seats. The school arranges for 6 Red buses and 8 Green buses. How many people can travel in total?
- A) 1030      B) 980      C) 1040      D) 150
- Q 12** Rahul has two types of boxes. Yellow boxes can hold 85 books each, and Brown boxes can hold 65 books each. He uses 7 Yellow boxes and 11 Brown boxes. How many books can he pack in total?
- A) 1240 books      B) 1180 books      C) 1140 books      D) 1310 books
- Q 13** A cashier has ₹3000 in total. The money is only in ₹20 and ₹10 notes. There are 210 notes altogether. How many ₹20 notes and ₹10 notes can she have from the following?
- A) 70 notes of ₹20 and 50 notes of ₹10      B) 90 notes of ₹20 and 120 notes of ₹10  
C) 100 notes of ₹20 and 40 notes of ₹10      D) 60 notes of ₹20 and 175 notes of ₹10
- Q 14** The price of one notebook is ₹75, and the price of one pen is ₹50. Which of the following combinations costs exactly ₹3750?
- A) 20 notebooks and 45 pens      B) 40 notebooks and 30 pens  
C) 35 notebooks and 25 pens      D) 25 notebooks and 35 pens
- Q 15** Bhumika has ₹4550. All her money is in ₹50 and ₹500 notes. The number of ₹50 notes is 3 times the number of ₹500 notes. How many ₹500 notes does she have?
- A) 5      B) 6      C) 7      D) 8
- Q 16** The weight of one rice sack is 25kg, and the weight of one sugar sack 20kg. For every 3 rice sacks, you have 5 sugar sacks.  
(Example: If there are 5 sugar sacks, then there are 3 rice sacks. If there are 10 sugar sacks, then there are 6 rice sacks, and so on.)  
The total weight of all the sacks is 13475 kg. How many rice sacks are there?
- A) 205      B) 231      C) 198      D) 210
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