

NavGurukul – Screening Test

School Of Programming

SOP - XYZ

Instructions

- All questions are multiple-choice.
- Choose only one correct answer for each question.
- Mark the correct answer on the OMR sheet.

Number Patterns

Q 1

What will be the next term in the pattern?

32, 37, 42, 47, ____

- | | |
|-------|-------|
| A) 67 | B) 52 |
| C) 46 | D) 38 |

Q 2

What will be the next term in the pattern?

42, 47, 54, 63, ____

- | | |
|-------|-------|
| A) 96 | B) 91 |
| C) 74 | D) 75 |

Q 3

What will be the next term in the pattern?

49, 64, 81, 100, ____

- | | |
|--------|--------|
| A) 132 | B) 117 |
| C) 121 | D) 123 |

Q 4

What will be the next term in the pattern?

3, 2, 6, 6, 12, ____

- | | |
|-------|-------|
| A) 13 | B) 18 |
| C) 12 | D) 15 |

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:

$$\text{Percentage} = (\text{Part} \div \text{Total}) \times 100$$

$$= (10 \div 50) \times 100 = 20\%$$

Now answer the following questions.

Q 5

I bought 70 apples, out of which 42 were fresh.

What percentage of apples are not fresh?

- | | |
|-------|-------|
| A) 40 | B) 32 |
| C) 43 | D) 33 |

Q 6

Arman bought 43 flowers, out of which 10 are roses.

If he bought 7 more roses, then what is the percentage of roses?

- | | |
|-------|-------|
| A) 34 | B) 29 |
| C) 42 | D) 36 |

Q 7

Arman has 30 red ribbons and 24 blue ribbons.

How many blue ribbons should he buy so that the percentage of blue ribbons becomes 50%?

- | | |
|-------|-------|
| A) 11 | B) 1 |
| C) 6 | D) 14 |

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 31 glasses of water, 4 taps take 10 minutes.

Then with 2 taps, how much time is needed to fill 31 glasses?

- | | |
|-------|-------|
| A) 22 | B) 23 |
| C) 20 | D) 26 |

Q 9

To fill 32 glasses, 4 taps take 24 minutes.

To fill 14 glasses in 6 minutes, how many taps are needed?

- | | |
|-------|-------|
| A) 17 | B) 15 |
| C) 7 | D) 12 |

Q 10

To fill 12 glasses, 6 taps take 12 minutes.

With 3 taps, how much time is needed to fill 24 glasses?

- | | |
|-------|-------|
| A) 46 | B) 52 |
| C) 48 | D) 49 |

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 97 seats, whereas Green bus has 65 seats.

The school arranges for 3 Red buses and 8 Green buses.

How many people can travel in total?

- | | |
|--------|--------|
| A) 912 | B) 894 |
| C) 811 | D) 569 |

Q 12

Priya has two types of boxes.

Yellow boxes can hold 68 books each and Brown boxes can hold 63 books each. She uses 6 Yellow boxes and 7 Brown boxes.

How many books can she pack in total?

- | | |
|--------|--------|
| A) 797 | B) 933 |
| C) 718 | D) 849 |

Q 13

A cashier has 1235 in total. The money is only in 12 coins and 15 coins. There are 101 coins/notes altogether. How many 12 coins and 15 coins are following?

- A) 20 of 12 coins and 11 of 15 coins
 B) 18 of 12 coins and 11 of 15 coins
 C) 21 of 12 coins and 11 of 15 coins
 D) 20 of 12 coins and 11 of 15 coins

Q 14

The price of one notebook is 159 and the price of one pen is 140. Which of the following combinations costs exactly 15190?

- A) 50 notebooks and 56 pens
 B) 66 notebooks and 56 pens
 C) 50 notebooks and 56 pens (variant)
 D) 50 notebooks and 56 pens (variant)

Q 15

Sita has 166. All her money is in 12 coins and 15 coins. The number of 12 coins is 3 times the number of 15 coins. How many 15 coins does she have?

- A) 6
 B) 2
 C) 4
 D) 5

Q 16

The weight of one cement sack is 50kg, and the weight of one sand sack is 25kg. For every 3 cement sacks, you have 2 sand sacks.

(Example: If there are 2 sand sacks, then there are 3 cement sacks. If there are 4 sand sacks, then there are 6 cement sacks, and so on.)

The total weight of all the sacks is 27600 kg. How many cement sacks are there?

- A) 409
 B) 525
 C) 501
 D) 414
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