



SATISH CHANDRA MEMORIAL SCHOOL

PRACTICE TEST-AUGUST, 2025

STD-VI

PART-II-CASE STUDY BASED QUESTION PAPER

MM=7+7=14

1. Case Study: Organizing a Math Mela at Kendriya Vidyalaya, Varanasi

Kendriya Vidyalaya in Varanasi is organizing a **Math Mela** to celebrate the **National Mathematics Day** in honor of **Srinivasa Ramanujan**. Students of Class 6 are setting up different stalls using mathematical themes. Ravi, Meena, and Kabir decide to make a stall called “**Prime Detectives**”, where visitors can play games involving **prime and composite numbers, factors, and multiples**.



They decide to:

- Arrange chairs in rows such that **each row has a prime number of chairs**.
- Distribute chocolates in packets containing a number of chocolates that is a **common multiple of 4 and 6**.
- Create a puzzle where people have to find the **HCF** of the number of puzzle cards.
- Use colorful flags on the stall such that **each color is used a prime number of times**.

The students also design a **magic board**, where only **prime-numbered cards** open secret compartments.

Q1. To arrange chairs in rows with a prime number of chairs in each, which of the following arrangements is not possible?

- A. 17 chairs in a row
- B. 23 chairs in a row
- C. 27 chairs in a row
- D. 29 chairs in a row

Q2. Ravi wants to make chocolate packets with a number that is a common multiple of 4 and 6. Which is the least number of chocolates he should use per packet?

- A. 10
- B. 12
- C. 24
- D. 18

Q3. There are 60 red flags and 84 green flags. Meena wants to make equal flag bundles with no flag left. What is the greatest number of flags in each bundle?

- A. 6
- B. 12
- C. 15
- D. 24

Q4. Meena created a puzzle with 45 and 75 puzzle cards in two boxes. What is the greatest number of cards she can keep in each row, such that both boxes are completely filled?

- A. 15
- B. 10
- C. 5
- D. 9

Q5. The Prime Detective Game allows visitors to unlock a secret box using only prime-numbered keys. Which key should not unlock the box?

- A. 7
- B. 11
- C. 16
- D. 17

Q6. Kabir says, “Every even number is a composite number.” Meena disagrees. Who is correct, and why?

- A. Kabir, because all even numbers are divisible by 2
- B. Meena, because 2 is even and prime
- C. Kabir, because primes can't be even
- D. Meena, because odd numbers are always prime

Q7. The students write numbers from 1 to 50 on cards. How many prime-numbered cards will be there?

- A. 10
- B. 12
- C. 15
- D. 18

2. Case Study: The Magic Village of Numbers

In a small village in **Rajasthan**, known as **Sankhya Gram (Number Village)**, the villagers are obsessed with numbers. Every house in the village has a number plate, and there are certain rules to how the numbers are placed:

- All **even-numbered** houses are painted **blue**.
- All **odd-numbered** houses are painted **green**.
- If a house number is divisible by **3 and 5**, it is marked with a **red flag**.
- Every 6th house has a **magic number** written on it, which is the **sum of its digits**.
- Children in the village play a game called "**Find the Hidden Number**", where they decode a 2-digit number using clues about divisibility, digit sum, and patterns.



One day, a child named **Meera** saw the number **45** and said, “This is a very special number in our village!” She then challenged her friends to find all such numbers between **10 and 99** that follow the same rules as 45.

Q 1. Why do you think the house number **45** was considered special in Sankhya Gram?

- a) It is an even number
- b) It is divisible by 2
- c) It is divisible by both 3 and 5
- d) It is a prime number

Q 2. Meera noticed that the sum of the digits of 45 is 9. Based on this, which of the following numbers can also be a magic number house?

- a) 27
- b) 34
- c) 52
- d) 73

Q 3. In the game “Find the Hidden Number,” one of the clues was: “I am a two-digit number, divisible by 5, and the sum of my digits is 6.” What is the number?

- a) 60
- b) 15
- c) 51
- d) 24

Q 4. Which of these numbers would **NOT** be marked with a **red flag** in Sankhya Gram?

- a) 30
- b) 45
- c) 60
- d) 25

Q 5. If every 6th house has a magic number (sum of its digits written on it), what would be the magic number on the **36th** house?

- a) 9
- b) 3
- c) 6
- d) 18

Q 6. Meera found a house number whose digit sum was 12, and it was also divisible by 3. Which of the following numbers could it be?

- a) 84
- b) 57
- c) 66
- d) 39

Q 7. A house number in Sankhya Gram is painted **green**, has a digit sum of 10, and is divisible by 5. Which of these could be that house number?

- a) 55
- b) 50
- c) 65
- d) 70