

About the Book

This book is specially designed for students preparing for the All India Sainik School Entrance Examination (AISSEE) Class 6th – Entrance Exam 2027. It is a complete syllabus-wise study book, prepared strictly according to the latest exam pattern and syllabus, so that students can rely on a single book for comprehensive preparation and build strong confidence for the exam.

Key Features of the Book:

- ✓ This book is prepared as per the latest NCERT-based syllabus, ensuring that students study only the relevant and exam-oriented content required for the AISSEE Class 6th entrance exam.
- ✓ It covers all the major subjects, including Mathematics, General Knowledge, Intelligence and English, in a well-structured and systematic manner, leaving no part of the syllabus incomplete.
- ✓ Each chapter is explained with clear concepts, simple language and easy-to-understand explanations, making it perfectly suitable for Class 6th aspirants.
- ✓ The book includes chapter-wise important practice questions, allowing students to test their understanding immediately after learning each topic and strengthen their preparation.
- ✓ A solved paper of the year 2026 with detailed solutions is included, helping students understand the real exam pattern, difficulty level and types of questions asked.
- ✓ This is a New Revised & Enlarged Edition, which also includes the latest available paper (18 January, 2026) to keep students fully updated with recent exam trends.
- ✓ The content is designed to support self-study, revision and self-assessment, enabling students to evaluate their preparation level and focus on areas for improvement.
- ✓ Written in a simple, student-friendly language, this study book is ideal for young learners aiming for the Sainik School Class 6th entrance exam.

With regular study and practice from this complete syllabus-wise study book, students can strengthen their fundamentals, reduce exam anxiety, understand real exam expectations and move confidently towards success in the All India Sainik School Entrance Examination (AISSEE) Class 6th – 2027

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Exam Class 6 Study Book

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Sainik School Entrance Exam Class 6 Study Book

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ALL INDIA

SAINIK SCHOOL

CLASS 6th

Entrance Exam 2027

COMPLETE

STUDY BOOK

Based on New NCERT textbooks

General Knowledge | Mathematics | Intelligence | English

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4in1BOOK

1 COMPLETE THEORY
As per AISSEE complete syllabus & New NCERT textbooks

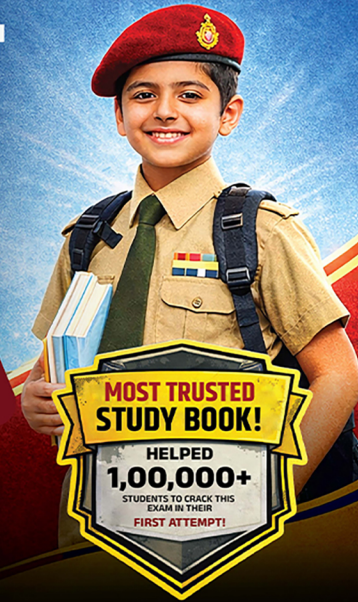
2 700+ PYQs
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Very important & most unique questions given for practice

4 1 Solved Paper
18 Jan 2026 solved paper included with solution

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Solved Paper

➤ AISSEE Solved Paper (Exam Date : 18-01-2026)

1-16

Mathematics

| Chapter No. | Chapter's Name (Complete Theory) | Total Questions | Page No. | | | |
|-------------|---|-----------------|--------------|---------------------------------------|---------------------------|-------------------------|
| 1. | Number System | 152 | 1-10 | | | |
| | <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) | | | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Mathematical Terminology | 11 | 12 |
| | 2. | | | Digits of Numbers | 13 | 7 |
| | 3. | | | Place Value and face Value | 5 | 3 |
| | 4. | | | Comparison of Numbers | 5 | 4 |
| | 5. | | | Classification of Numbers | 18 | 4 |
| | 6. | | | Approximate Value of Numbers | 5 | 3 |
| | 7. | | | Predecessor and Successor of a Number | 2 | 2 |
| | 8. | | | Divisibility Test of Numbers | 16 | 3 |
| 9. | Miscellaneous | 32 | 7 | | | |
| | Total | 107 | 45 | | | |
| 2. | Four Fundamental Operations on Whole Number | 92 | 11-16 | | | |
| | <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) | | | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Addition | 7 | 2 |
| | 2. | | | Subtraction | 4 | 4 |
| | 3. | | | Multiplication | 6 | 3 |
| | 4. | | | Divide | 7 | — |
| 5. | Miscellaneous | 49 | 3 | | | |
| | Total | 80 | 12 | | | |

| Chapter No. | Chapter's Name (Complete Theory) | Total Questions | Page No. | | | |
|--|---|-----------------|-----------|-----------------------|---------------------------|-------------------------|
| 3. | LCM & HCF | 115 | 17-23 | | | |
| | <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) | | | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Factors and Multiples | 42 | 2 |
| | 2. | | | L.C.M. | 9 | 1 |
| | 3. | | | H.C.F. | 8 | 1 |
| 4. | Miscellaneous | 52 | — | | | |
| Total | | 111 | 4 | | | |
| 4. | Fractional Numbers (Arranging of Fractions) | 102 | 24-31 | | | |
| <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—75 ➤ PYQs (2018-2025)—27 | | | | | | |
| 5. | Decimal and Fundamental Operations on Them | 89 | 32-36 | | | |
| <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—80 ➤ PYQs (2018-2025)—9 | | | | | | |
| 6. | Conversion of Fractions to Decimals and Vice-versa | 78 | 37-41 | | | |
| <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—73 ➤ PYQs (2018-2025)—5 | | | | | | |
| 7. | Simplification of Numerical Expressions | 96 | 42-47 | | | |
| | <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) | | | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Simplification | 19 | 12 |
| | 2. | | | Approximation | 3 | — |
| | 3. | | | Miscellaneous | 60 | 2 |
| Total | | 82 | 14 | | | |
| 8. | Average | 51 | 48-50 | | | |
| <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—32 ➤ PYQs (2018-2025)—19 | | | | | | |

| Chapter No. | Chapter's Name (Complete Theory) | Total Questions | Page No. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------|--|--------------------|------------------|--------------------|------------------|----|-----------------------|---|---|----|-----------------------|---|---|----|----------|---|---|----|---------------------|---|---|----|-------------|---|---|----|---------------|----|---|--------------|--|-----------|-----------|----|-------|
| 9. | Unitary Method <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—27 ➤ PYQs (2018-2025)—19 | 46 | 51-54 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10. | Measurement of Length, Mass, Capacity, Time, Money etc. <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Topic No.</th> <th>Name of Topic</th> <th>Practice Questions</th> <th>PYQs (2018-2025)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Measurement of Length</td> <td>5</td> <td>4</td> </tr> <tr> <td>2.</td> <td>Measurement of Weight</td> <td>7</td> <td>6</td> </tr> <tr> <td>3.</td> <td>Capacity</td> <td>4</td> <td>2</td> </tr> <tr> <td>4.</td> <td>Measurement of Time</td> <td>7</td> <td>7</td> </tr> <tr> <td>5.</td> <td>Temperature</td> <td>1</td> <td>5</td> </tr> <tr> <td>6.</td> <td>Miscellaneous</td> <td>26</td> <td>1</td> </tr> <tr> <td colspan="2" style="text-align: center;">Total</td> <td>50</td> <td>25</td> </tr> </tbody> </table> | Topic No. | Name of Topic | Practice Questions | PYQs (2018-2025) | 1. | Measurement of Length | 5 | 4 | 2. | Measurement of Weight | 7 | 6 | 3. | Capacity | 4 | 2 | 4. | Measurement of Time | 7 | 7 | 5. | Temperature | 1 | 5 | 6. | Miscellaneous | 26 | 1 | Total | | 50 | 25 | 75 | 55-61 |
| Topic No. | Name of Topic | Practice Questions | PYQs (2018-2025) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | Measurement of Length | 5 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. | Measurement of Weight | 7 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. | Capacity | 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. | Measurement of Time | 7 | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Temperature | 1 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Miscellaneous | 26 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | | 50 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Ratio and Proportion <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—90 ➤ PYQs (2018-2025)—10 | 100 | 62-67 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | Percentage <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—89 ➤ PYQs (2018-2025)—17 | 106 | 68-72 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. | Profit and Loss <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—61 ➤ PYQs (2018-2025)—23 | 84 | 73-77 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14. | Simple Interest <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—84 ➤ PYQs (2018-2025)—12 | 96 | 78-83 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15. | Speed, Time and Distance <ul style="list-style-type: none"> ● Concepts & Solved Examples ● Questions (Based on Different Topics) ➤ Total Questions—62 ➤ PYQs (2018-2025)—14 | 76 | 84-88 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Chapter No. | Chapter's Name (Complete Theory) | Total Questions | Page No. | | | |
|--------------|---|-----------------|-----------|----------------------------------|---------------------------|-------------------------|
| 16. | Lines, Angle and Plane Figure <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) | 117 | 89-102 | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Lines | 8 | 15 |
| | 2. | | | Angles | 18 | — |
| | 3. | | | Miscellaneous | 73 | 3 |
| Total | | 99 | 18 | | | |
| 17. | Area and Perimeter <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) | 159 | 103-111 | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Square | 12 | 2 |
| | 2. | | | Rectangle | 21 | 11 |
| | 3. | | | Triangle | 10 | 1 |
| | 4. | | | Questions Based on Area of Paths | 4 | 9 |
| | 5. | | | Miscellaneous | 88 | 1 |
| Total | | 135 | 24 | | | |
| 18. | Circle <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) <ul style="list-style-type: none"> ➤ Total Questions—49 ➤ PYQs (2018-2025)—3 | 52 | 112-114 | | | |
| 19. | Surface Area and Volume <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) | 77 | 115-118 | | | |
| | Topic No. | | | Name of Topic | Practice Questions | PYQs (2018-2025) |
| | 1. | | | Cuboid | 19 | 7 |
| | 2. | | | Cube | 46 | 5 |
| Total | | 65 | 12 | | | |
| 20. | Pattern <ul style="list-style-type: none"> • Concepts & Solved Examples • Questions (Based on Different Topics) <ul style="list-style-type: none"> ➤ Total Questions—20 | 20 | 119-120 | | | |

General Knowledge

| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|-----------------------|---|--------------------|------------------|----------|
| Social Science | | | | |
| 1. | Indian History | 13 | 6 | 1-9 |
| 2. | Major Religions of India, Art and Culture | 14 | 14 | 10-19 |

| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|------------------------|---|--------------------|------------------|----------|
| 3. | Historical Monuments | 8 | 6 | 20-22 |
| 4. | Solar System, Atmosphere, Earth and Gravitation | 17 | 5 | 23-29 |
| 5. | Continents, Mountains and River Systems of the World | 5 | 6 | 30-32 |
| 6. | Soils and Natural Vegetation | 6 | 5 | 33-35 |
| 7. | Energy Resources | 11 | 4 | 36-40 |
| 8. | Indian Geography | 12 | 5 | 41-47 |
| 9. | Language and Cuisine in India | 3 | 3 | 48-51 |
| 10. | Farmers and Farming Techniques | 8 | 4 | 52-54 |
| 11. | Tribal Communities and Forest Produce | 6 | 1 | 55-56 |
| 12. | Environment and Ecology | 13 | 3 | 57-62 |
| 13. | Water in Everyday Life, Water Harvesting and Pollution and Microbial Diseases | 6 | 10 | 63-67 |
| 14. | Indian Constitution and Polity | 10 | 6 | 68-75 |
| General Science | | | | |
| 15. | Scientific Devices and their Daily Uses | 19 | 6 | 76-80 |
| 16. | Animal and Surroundings (Super Senses) | 13 | 8 | 81-84 |
| 17. | Structural Organisations of Plants and Animals and Nutrition | 15 | 18 | 85-93 |
| 18. | Relationship between Humans and Animals | 20 | — | 94-96 |
| 19. | Germination and Seed Dispersal | 13 | 3 | 97-99 |
| 20. | Food, Cooking and Preservation Techniques | 17 | 2 | 100-103 |
| 21. | Evaporation, Condensation and Water Cycle | 17 | 4 | 104-106 |
| 22. | General Science/Miscellaneous | 23 | 6 | 107-111 |
| 23. | Indian Defence System | 18 | 6 | 112-120 |
| Static G.K. | | | | |
| 24. | Sports and Games | 11 | 8 | 121-127 |
| 25. | National and International Awards | 7 | 4 | 128-133 |
| 26. | National and International Organizations | 8 | 5 | 134-137 |
| 27. | Miscellaneous | 14 | 8 | 138-146 |
| Total Questions | | 327 | 156 | |

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| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|-------------|----------------------------------|--------------------|------------------|----------|
| 1. | Reading Comprehension | 85 | 15 | 1-7 |
| 2. | Types of Sentences | 18 | 3 | 8-9 |
| 3. | Articles | 21 | 5 | 10-12 |
| 4. | The Noun : Kinds of Noun | 15 | 8 | 13-14 |

| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|------------------------|---------------------------------------|--------------------|------------------|----------|
| 5. | The Noun : Number-Singular and Plural | 13 | 3 | 15-16 |
| 6. | The Noun : Gender | 23 | 5 | 17-18 |
| 7. | Rhyming Words | 10 | – | 19 |
| 8. | Pronoun : Kinds of Pronoun | 7 | 11 | 20-21 |
| 9. | Adjective and Degrees of Comparison | 17 | 9 | 22-24 |
| 10. | Verb and Types | 27 | 1 | 25-27 |
| 11. | Subject Verb Agreement | 11 | – | 28-29 |
| 12. | Adverbs | 24 | 5 | 30-32 |
| 13. | Preposition | 29 | 5 | 33-35 |
| 14. | Conjunction | 20 | 2 | 36-37 |
| 15. | Interjection | 10 | – | 38 |
| 16. | Tense Forms | 38 | 3 | 39-42 |
| 17. | Question Tag | 20 | – | 43-44 |
| 18. | Sentence Formation | 21 | – | 45-47 |
| 19. | Ordering of Words in Sentence | 29 | 1 | 48-49 |
| 20. | Synonyms | 30 | 1 | 50-53 |
| 21. | Antonyms | 35 | 1 | 54-57 |
| 22. | Idioms and Phrases | 28 | 1 | 58-60 |
| 23. | One Word Substitution | 35 | – | 61-63 |
| 24. | Correct Spelling | 42 | 1 | 64-65 |
| 25. | Confusing Words | 15 | – | 66-68 |
| 26. | Figures of Speech | 11 | – | 69 |
| Total Questions | | 634 | 80 | |

Intelligence

| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|-------------|----------------------------------|--------------------|------------------|----------|
| 1. | Coding-Decoding | 23 | 9 | 1-4 |
| 2. | English Alphabet Test | 33 | 7 | 5-9 |
| 3. | Analogy Test | 16 | 33 | 10-15 |
| 4. | Classification | 20 | 25 | 16-20 |
| 5. | Logical Sequence of Words | 30 | 7 | 21-24 |
| 6. | Blood Relation Test | 27 | 4 | 25-28 |
| 7. | Direction Test | 25 | 6 | 29-32 |
| 8. | Ranking Test | 25 | 8 | 33-36 |
| 9. | Series Test | 23 | 30 | 37-42 |
| 10. | Missing Terms | 30 | 7 | 43-46 |
| 11. | Mathematical Operations | 30 | 8 | 47-49 |
| 12. | Venn Diagram | 26 | 5 | 50-53 |
| 13. | Clock | 15 | 1 | 54-55 |
| 14. | Figure Analogy | 37 | 3 | 56-62 |

| Chapter No. | Chapter's Name (Complete Theory) | Practice Questions | PYQs (2018-2025) | Page No. |
|-------------|----------------------------------|--------------------|------------------|----------|
| 15. | Figure Classification | 36 | 3 | 63-66 |
| 16. | Figure Series | 32 | 7 | 67-74 |
| 17. | Paper Folding | 28 | 3 | 75-80 |
| 18. | Embedded Figures | 32 | 4 | 81-86 |
| 19. | Mirror Image & Water Image | 32 | 11 | 87-93 |
| 20. | Complete Figure | 30 | 3 | 94-99 |
| 21. | Figure Counting | 36 | 2 | 100-105 |
| | Total Questions | 586 | 186 | |

Answer Key

| | | |
|----|-------------------|-------|
| 1. | Mathematics | 1-6 |
| 2. | General Knowledge | 6-11 |
| 3. | English | 11-16 |
| 4. | Intelligence | 17-21 |



1 CHAPTER

Number System

1. MATHEMATICAL TERMINOLOGY

I. Digits : 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 are defined as digits in Mathematics. We can create many numbers by using these digits. For example: 10, 123, 456, 789, etc.

II. Number System : There are mainly two types defined in the number systems These are :

(i) Decimal Number System : It contains 0 to 9 digits. That's why it is called *decimal number system*. In this system, the numbers is read and written in two ways :

● **Indian number system**

In the Indian number system or Hindi-Arabic system, the numbers are read and written as per their place values. These numbers are read as per the following table.

| Periods | Crores | | Lakhs | | Thousands | | Ones | |
|---------|------------------------------|------------------------|--------------------------|--------------------|---------------------------|---------------------|------------------|-------------|
| Value | 10,00,00,000 (Ten Crores) | 1,00,00,000 (Crore) | 10,00,000 (Ten Lakhs) | 1,00,000 (Lakh) | 10,000 (Ten Thousands) | 1,000 (Thousand) | 100 (Hundred) | 10 (Ten) |
| | 10^8 | 10^7 | 10^6 | 10^5 | 10^4 | 10^3 | 10^2 | 10^1 |
| | | | | | | | | 10^0 |

Example : Number 51,45,42,786 can be read as Fifty-one Crores Forty-five Lakhs Forty-two Thousands Seven Hundred and Eighty-six. It is also called **number name**.

Unit Conversions :

- 1 tens = 10 units
- 1 Hundred = 10 tens = 100 units
- 1 Thousand = 10 Hundreds = 100 tens = 1000 units
- 10 Thousand = 100 Hundreds = 1000 tens
- 1 Lakh = 100 Thousands = 1000 Hundreds = 10000 tens
- 10 Lakhs = 1000 Thousands = 10000 Hundreds = 100000 tens

● **International number system**

In International number system, the numbers are read and written as per the following table.

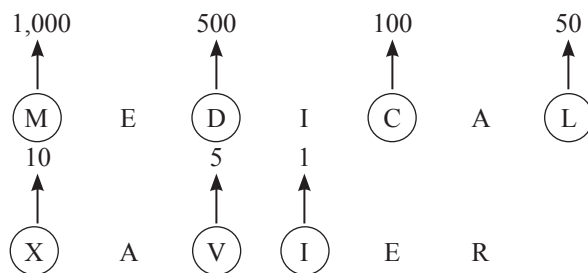
| Periods | Millions | | | Thousands | | | Ones | |
|---------|-----------------------------------|------------------------------|-------------------------|-------------------------------|--------------------------|---------------------|------------------|-------------|
| Value | 100,000,000 (Hundred Millions) | 10,000,000 (Ten Millions) | 10,00,000 (Millions) | 100,000 (Hundred Thousand) | 10,000 (Ten Thousand) | 1,000 (Thousand) | 100 (Hundred) | 10 (Ten) |
| | 10^8 | 10^7 | 10^6 | 10^5 | 10^4 | 10^3 | 10^2 | 10^1 |
| | | | | | | | | 10^0 |

Example : Number 14,542,786 can be read as Fourteen Million Five Hundred Forty-two Thousand Seven Hundred Eighty-six.

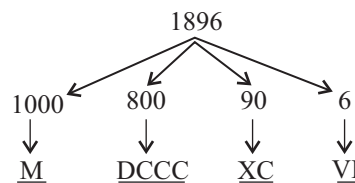
(ii) Roman Number System : In this system, numbers are represented by Latin alphabets. The Roman numerals used in, are based on seven symbols or letters.

| Roman System | I | V | X | L | C | D | M |
|---------------------|---|---|----|----|-----|-----|------|
| Hindu Arabic System | 1 | 5 | 10 | 50 | 100 | 500 | 1000 |

This is an easy way to remember the values of the seven Roman numeral letters :



Let us learn how to write numbers using these seven letters :



(i) Repetition of Letters (Addition Rule)

- A letter can be repeated a maximum of three times.
- V, L and D are never repeated.
- V and L are never used for subtraction.

Examples : 1,000 → M
800 → DCCC

(ii) Smaller Value after a Larger Value

When a smaller value comes after a larger value, the values are added.

Example : 6 → VI (5 + 1)

(iii) Smaller Value before a Large Value

When a smaller value comes before a larger value, the smaller value is subtracted.

Example : 90 → XC (100 - 10)

Then, the Roman notation of 1896 = MDCCXCVI

Example : 25 can be written as XXV and 101 as CI.

Note

- If any symbol is repeated, its value is the sum of the number of times it occurs.

- No symbol is repeated more than three times.
- Symbols V, L and D are never repeated.
- If a symbol with a smaller value is placed to the right of a symbol with a larger value, the smaller value is added to the larger value.
- If a symbol with a smaller value is placed to the left of a symbol with a larger value, then the smaller value is subtracted from the larger value.
- The values of symbols V, L and D are never subtracted. The symbol I can be subtracted from V and X. The symbol X can be subtracted from L, M and C.

2. DIGITS OF NUMBER

- **Units** : Digit 0 to 9 are called Unit digits. The smallest and the largest number of 1-digit are 0 and 9 respectively.
- **Tens** : The numbers from 10 to 99 are called ten numbers. The smallest and the largest number of 2-digit are 10 and 99 respectively.
- **Hundred** : The numbers from 100 to 999 are called hundred numbers. The smallest and the largest number of 3-digit are 100 and 999 respectively.
- **Thousand** : The numbers from 1,000 to 9,999 are called thousand numbers. The smallest and the largest number of 4-digit are 1000 and 9999 respectively.
- **Ten thousand** : The numbers from 10,000 to 99,999 are called ten thousand numbers. The smallest and the largest number of 5-digit are 10,000 and 99,999 respectively.
- **Lakh** : The numbers from 1,00,000 to 9,99,999 are called lakh numbers. The smallest and the largest number of 6-digit are 1,00,000 and 9,99,999 respectively.
- **Ten Lakh** : The numbers from 10,00,000 to 99,99,999 are called ten lakh numbers. The smallest and the largest number of 7-digit are 10,00,000 and 99,99,999 respectively.
- **Crore** : The numbers from 1,00,00,000 to 9,99,99,999 are called crore numbers. The smallest and the largest number of 8-digit are 1,00,00,000 and 9,99,99,999 respectively.

3. PLACE VALUES AND FACE VALUES

Example :

| | | | | | |
|----------------------------|--------------------------|------------------------|----------------------|--------------------|---|
| 4 | 8 | 9 | 7 | 6 | 5 |
| ↑ | ↑ | ↑ | ↑ | ↑ | ↑ |
| 4 | 8 | 9 | 7 | 6 | 5 |
| ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| | | | | $5 \times 1 = 5$ | |
| | | | | $6 \times 10 = 60$ | |
| | | | $7 \times 100 = 700$ | | |
| | | $9 \times 1000 = 9000$ | | | |
| | $8 \times 10000 = 80000$ | | | | |
| $4 \times 100000 = 400000$ | | | | | |

Face Values
The face value of a digit is the digit itself.

Place Values
The value or place value of a digit is the digit multiplied by the value of its place.

In the number 59,438, the face value of 9 is 9.

Note

If x and y be the tens digit and unit digit respectively, then the 2-digit number formed by these digits will be $10x + y$.

4. COMPARISON OF NUMBERS

- **When both numbers have unequal number of digits**

The number having more digits is greater. It means
5-digit number > 4-digit number > 3-digit number

Example : Find out which is greater 5429683 or 65245893?

Solution : Since, the first number 5429683 is of 7-digit number and the second number 65245893 is of 8-digit Therefore, the second number is greater than the first number.

- **When both numbers have equal number of digits**

In case of the equal number of digits, we have to check the place value of the left-most digit of both numbers. If the digits of both numbers are also equal, then we move to its next digit placed on the right side and repeat the process until we get the desired result.

Example: Arrange the following numbers in ascending order.

5403100, 5460860, 5458087, 5420378

Solution: At first, we check the place value of the leftmost digit of each number. Then repeat the same process until we get the answer. Here, in each number, two leftmost digits are equal. After that, we check ten thousand place values and then arrange the digits in ascending order. Hence, we get

$5403100 < 5420378 < 5458087 < 5460860$

5. CLASSIFICATION OF NUMBERS

There are several types of numbers exist in the number system for different purposes. These numbers are classified into different groups according to their properties. These are –

- **Natural Numbers** : Counting numbers starting from 1, 2, 3..., etc., are called natural numbers. It is represented by capital letter **N**. Its set is shown as

$$N = \{1, 2, 3, 4, 5, \dots\}$$

- **Whole Numbers** : All natural numbers along with 0 is known as whole numbers. It is represented by capital letter **W**. Its set is shown as

$$W = \{0, 1, 2, 3, 4, \dots\}$$

- **Even and Odd Numbers** : A number is even if it is a multiple of two, and is odd otherwise. **Even numbers** are denoted by capital letter **E** and **odd numbers** are denoted by capital letter **O**.

$$E = \{2, 4, 6, 8, \dots\} \text{ and } O = \{1, 3, 5, 7, \dots\}$$

- **Integers** : Positive and negative counting numbers, with zero are called integers. Integers are denoted by capital letter Z .

$$Z = \{\dots -3, -2, -1, 0, 1, 2, 3\dots\}$$

- **Prime Numbers** : An integer with exactly two positive divisors: itself and 1, is called prime number. For example, 2, 3, 5, 7, 11, 13...etc., are the **prime numbers**. 2 is the smallest prime number.
- **Composite Numbers** : All those numbers greater than 1 that are not prime are called **composite numbers**. For example, 4, 6, 8, 9, 10, etc., are few composite numbers.
- **Rational Numbers** : Numbers that can be expressed as a ratio of an integer to a non-zero integer. Moreover any repeating or terminating decimal represents a **rational number**. Rational numbers are denoted by capital letter Q . All integers are rational, but the converse is not true.

$$Q = \left\{ \dots \frac{2}{3}, -1, 0, \frac{1}{4} \dots \right\}$$

- **Irrational Numbers** : All those real numbers that are not rational *i.e.*, those numbers that can not be written as a ratio as two integers are called irrational numbers. Moreover these numbers goes on forever without repeating. Irrational numbers are denoted by I .

$$I = \left\{ \dots \frac{2}{3}, \sqrt{2}, \sqrt{3} \dots \right\}$$

- **Real Numbers** : Positive, negative, zero and all types at decimal numbers are called real numbers. All rational numbers are real, but the converse is not true. These because they are not imaginary numbers.

6. APPROXIMATE VALUES OF NUMBERS

Place values are considered to be the base to find approximation values in numbers. Approximation value of few place values is determined by the following methods :

- **Approximate value nearest tens place** : If the number at units place is less than 5 then it is rounded of zero otherwise add 1 to the tens place and keeps unit place as zero.
Example : 73 can be rounded off to 70, 156 can be rounded off to 160 and 4265 can be rounded off to 4270.
- **Approximate value nearest hundred place** : If the number at tens place is less than 5 then it is rounded of zero otherwise add 1 to the hundred place and keeps tens place and unit place as zero.
Example : 510 can be rounded off to 500, 9573 can be rounded off to 9600 and 53650 can be rounded off to 53700.
- **Approximate value nearest thousand place** : If the number at hundred place is less than 5 then it is rounded of zero otherwise add 1 to the thousand place and keeps hundred place, tens place and unit place as zero.
Example : 6240 can be rounded off to 6000, 17573 can be rounded off to 18000 and 553650 can be rounded off to 554000.

7. PREDECESSOR AND SUCCESSOR OF A NUMBER

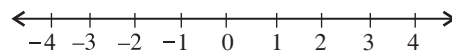
We start counting from the number 1. Hence 1 is the first natural number and the next natural number is 2 which is obtained by adding 1 to the first number. Hence, numbers are represented in two ways according to their orderliness :

- **Antecedent Number** : The natural number immediately preceding a natural number is its predecessor.
Example : Predecessor number of 65 = $65 - 1 = 64$
Predecessor number of 127 = $127 - 1 = 126$
- **Subsequent Number** : The natural number immediately next to any natural number is its successor.
Example : Successor number of 785 = $785 + 1 = 786$
Successor number of 109 = $109 + 1 = 110$

8. INTEGERS

Integers are the collection of all positive and negative natural numbers including zero (0).

Representation of integers on number line :



- Numbers 1, 2, 3, 4, are positive integers.
- Numbers -1, -2, -3, -4, are negative integers.
- Zero (0) is neither negative nor positive.
- All positive integers lie to the right side of zero (0) and all negative integers lie to the left of zero (0).

Predecessor and Successor Integers : The integer, immediately to the left of an integer on the number line, is called its predecessor and the integer, immediately to the right of an integer on the number line, is called its successor.

- For example** :
- The predecessor and successor of 2 are 1 and 3 respectively.
 - The predecessor and successor of -2 are -3 and -1 respectively.
 - The predecessor and successor of -1 and -2 are 0 and -3 respectively.

Additive Inverse : For any integers a ,
 $a + (-a) = 0$

So, $-a$ is the additive inverse of an integer a .

The sum of an integer and its additive inverse is always 0.

- For example**,
- additive inverse of 6 = -6
 $\therefore 6 + (-6) = 0$
 - Additive inverse of -8 = 8
 $\therefore (-8) + 8 = 0$

Note

- The additive inverse of a positive integer is a negative integer while the numerical value is the same.
- The additive inverse of a negative integer is a positive integer while the numerical value is the same.

9. FORMING NUMBERS

We can form the largest and smallest number using any given digits.

To form the largest number, arrange the digits in the descending order.

For example, the largest 8-digit number formed using the digits 3, 5, 1, 9, 8, 0, 4 and 2 is 9, 85, 43, 210.

To form the smallest number, arrange the digits in the ascending order.

For example, the smallest 8-digit number formed using the digits 3, 5, 1, 9, 8, 0, 4 and 2 is 1, 02, 34, 589.

We cannot put 0 as the first digit to form the smallest 8-digit number.

Hence, the smallest 8-digit number formed using the given digit is 1,02,34,589.

Note

- To find the greatest number up to given digits, then write the digit '9' equal to the number of the digits.
Ex. : Greatest number of 3-digit = 999
Greatest number of 5-digit = 99999
- To find the smallest number up to given digits, write the first digit '1' and then write '0' equal to the remaining the number of digits.
Ex. : Smallest number of 4-digit = 1000
Smallest number of 6-digit = 100000

10. DIVISIBILITY TEST OF NUMBERS

- Divisibility by 2 :**
If the unit digit of a number is any *i.e.*, 0, 2, 4, 6, 8, then the given number is divisible by 2.
Example : 84, 786, 282, 1008, 5000....., etc., are divisible by 2.
- Divisibility by 3 :**
A number is divisible by 3, if the sum of all digits of the number is divisible by 3.
Example : 786, here $7 + 8 + 6 = 21$ (completely divisible by 3)
So, the number 786 will be divisible by 3
- Divisibility by 4 :**
A number is divisible by 4, if the last two-digit of the number is divisible by 4.
Example : 3464, here 64 is the last two-digit number which is divisible by 4.
So, the number 3464 will be divisible by 4.
- Divisibility by 5 :**
A number is divisible by 5, if the unit digit of the number is either 0 or 5.
Example : 3125, 2010, 2015, 6580....., etc. are divisible by 5.
- Divisibility by 6 :**
A number is divisible by 6, if the number is divisible by the numbers 2 and 3.
Example : Test whether number 8202 is divisible by 6.
(i) The unit digit of the number is 2 which is divisible by 2.

(ii) The sum of digits of the number = $8 + 2 + 0 + 2 = 12$ (divisible by 3)

Since, it is clear from (i) and (ii) that the number 8202 is divisible by both 2 and 3. So, the number will be divisible by 6.

- Divisibility by 7 :**
Take the last digit of the given number and double it. Subtract this number from the rest of the digits in the original number. If this new number is either 0 or if it's a number that is divisible by 7, then the given number is also divisible by 7.
Example : Test whether number 2492 is divisible by 7.
Solution : Here, the unit digit of the number = 2
 $249 - 2 \times 2 = 245$ (divisible by 7). So, the number will be divisible by 7.
- Divisibility by 8 :**
A number is divisible by 8, if the last three-digit of the number is divisible by 8.
Example : Test whether number 6288 is divisible by 8.
Solution : Here, in the given number, 288 is the last three-digit number which is completely divisible by 8.
So, the number 6288 will be divisible by 8.
- Divisibility by 9 :**
A number is divisible by 9, if the sum of its digits is divisible by 9.
Example : Test whether number 7074 is divisible by 9.
Sum of all digits of the number = $7 + 0 + 7 + 4 = 18$ (divisible by 9).
So, the number 7074 will be divisible by 9.
- Divisibility by 11 :**
A number is divisible by 11, if difference between the sum of digits at odd places and the sum of digits at even places, is divisible by 11.
Example : Test whether number 86460 is divisible by 11.
Sum of the all digits at even places in the number = $6 + 6 = 12$
Sum of the all digits at odd places in the number = $8 + 4 + 0 = 12$
Their difference = $12 - 12 = 0$. So, the number 6288 will be divisible by 11.

11. SOME IMPORTANT EXAMPLES

- Example 1 :** Which of the following is the correct representation for number 99 ?
- Solution :** Roman number of 99 is XCIX.
- Example 2 :** Find the sum of 4-digit greatest number and 6-digit smallest number, each having 3 different digits.
- Solution :** Greatest number of 4-digit having 3 different digits = 9987
Smallest number of 6-digit having 3 different digits = 100002
Required sum = $9987 + 100002 = 109989$
- Example 3 :** Subtract 28,576 from the sum of the least and the greatest 5-digit number formed using the digits 3, 0, 5, 8 and 1.
- Solution :** Least number of 5-digit formed using the digits 3, 0, 5, 8, 1 = 10358

Greatest number of 5-digit formed using the digits 3, 0, 5, 8, 1 = 85310

Required answer
 $= (10358 + 85310) - 28576$
 $= 95668 - 28576 = 67092$

Example 4 : Which of the following are four consecutive composite numbers ?

- (1) 22, 23, 24, 25
- (2) 60, 61, 62, 65
- (3) 56, 57, 58, 59
- (4) 90, 91, 92, 93

Solution : We know that composite numbers are those numbers which have more than two factors.

- (1) the number 23 is a prime number *i.e.* not a composite number.
- (2) the number 61 is a prime number.
- (3) the number 59 is a prime number.
- (4) all the numbers 90, 91, 92, 93 are composite numbers, because the factors of these numbers are more than two.

Factors of 90 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 30, 45, 90

Factors of 91 = 1, 7, 13, 91

Factors of 92 = 1, 2, 4, 23, 46, 92

Factors of 93 = 1, 3, 31, 93.

Hence, (4) is the correct answer.

Example 5 : Find the smallest five digit number using three different digits.

Solution : Smallest five digit number using three different digits is 10002.

Example 6 : Fill in the blank.

CCCXC + LIX =

Solution : CCC XC + LIX
 $= 390 + 59$
 $= 449$
 $= CDXLIX$

Example 7 : In a particular year, 76,43,872 students appeared for an exam. Out of them if 42,37,602 were girls, how many were boys?

Solution : Total students appeared = 76,43,872
 Girls were = 42,37,602
 The boys = Total students – girls
 $= 76,43,872 - 42,37,602$
 The number of boys were
 $= 34,06,270$

Important Questions

1. Mathematical Terminology

1. Two lakh two thousand, in digits, is written as :
 (A) 20200 (B) 200200 (C) 202000 (D) 22000
2. 16 lakhs, eight hundred thirteen is written as :
 (A) 16813 (B) 160830 (C) 1600813 (D) 160713
3. Find the largest in the following.
 (A) XLIII + XLIV (B) LXXIX – XXXIX
 (C) XCIX – LXVIII (D) LVII + XL
4. One crore ten thousands six hundred eleven is written as :
 (A) 10,10,611 (B) 10,10,10,611
 (C) 1,00,10,611 (D) 100,00,10,611
5. The largest 3-digit roman number is :
 (A) IXIXIX (B) CMIXIX
 (C) CMXCIX (D) C MIIC
6. The roman numeral of 67 is :
 (A) XLVII (B) LXVII (C) XXVII (D) DXVII
7. There are XC students in Class 8th. XL students are absent today. How many students are present (in roman numeral)?
 (A) L (B) XL (C) LX (D) X
8. Write Roman numerals DXLIX in Arabic numerals.
 (A) 569 (B) 549 (C) 369 (D) 469
9. Write 98 in Roman numerals.
 (A) XCVII (B) XCVVI (C) XCVIII (D) XCVIV
10. The Roman numeral of 94 is?
 (A) XCV (B) XCVI (C) XCIV (D) XCIII
11. 30009 is same as :
 (A) 30 ten thousands and 9 tens
 (B) 30 thousands and 9 hundreds

- (C) 3 ten thousands and 9 ones
- (D) 3 ten thousands and 9 tens

2. Digits of Numbers

12. Find a 4 digit number, formed by different digits, in which 9 is at the place of tens ?
 (A) 1092 (B) 1290 (C) 2091 (D) 2190
13. The smallest even number formed by using the digits 9, 5, 0, 2, 4 is
 (A) 20594 (B) 20459 (C) 02594 (D) 02459
14. What is that smallest number made up of by using the digits 4, 5, 0 and 3 (The repetition of digits is possible) ?
 (A) 30450 (B) 30045 (C) 34500 (D) 30540
15. The difference of largest and smallest number of 5 digits which is made up of 0, 3, 6, 8 and 9 digits. (each digit can be used once only) ?
 (A) 94941 (B) 61821 (C) 61740 (D) 67941
16. The largest even number of 5 digits, which is made up of 3, 0, 5, 7 and 8 is :
 (A) 83570 (B) 85703 (C) 87530 (D) 87350
17. The largest number of 5 digits which is made by 9, 6, 3 and 0 (any digit can be used twice) is :
 (A) 96630 (B) 96300 (C) 99630 (D) 90963
18. What is the largest even number of 5 digits formed by digits 4, 0, 6, 7, 3 & 8 ?
 (A) 70648 (B) 87643 (C) 87634 (D) 87640
19. Find the smallest number of four digits whose each every digit is different ?
 (A) 1000 (B) 1023 (C) 1032 (D) 1230

20. The smallest number of 5 digit formed with the digits 3, 0, 8, 4 and 1.
(A) 10843 (B) 10834 (C) 10348 (D) 18034
21. Find the largest number which can be formed by 3, 8, 7, 9 ?
(A) 8973 (B) 9873 (C) 9783 (D) 3789
22. Write the smallest 3-digit number which will not change on reversing the digits.
(A) 100 (B) 888 (C) 999 (D) 101
23. The greatest 5-digit number is :
(A) 99999 (B) 100000 (C) 98765 (D) 56789
24. The greatest 8-digits number with given digits 5, 8, 7, 5, 2, 0, 6 and 1 is :
(A) 88765210 (B) 87765210
(C) 88765521 (D) 87655210

3. Place Value and Face Value

25. What is the sum of the place value of 5 in the number 584356 ?
(A) 10 (B) 50050 (C) 5050 (D) 500050
26. Which digit has the maximum place value in the number 59368 ?
(A) 9 (B) 8 (C) 5 (D) 6
27. Place value of 7 in the number 9374293 is :
(A) 700 (B) 7000 (C) 70000 (D) 700000
28. What is the difference between the place value and face value of 7 in 329075?
(A) 63 (B) 36 (C) 49 (D) 490
29. Find the place value of 7 in 874213 :
(A) 1000 (B) 7 (C) 74213 (D) 70000

4. Comparison of Numbers

30. Which is largest number of the following four numbers ? 8080, 8800, 8008, 8880
(A) 8080 (B) 8008 (C) 8880 (D) 8800
31. Write the following in ascending order : 11023, 11032, 12031, 12013
(A) 11023, 12031, 12013, 11032
(B) 11032, 12013, 11023, 12031
(C) 11023, 11032, 12013, 12031
(D) 11032, 11023, 12013, 12031
32. Arrange the following numbers in ascending order : 98230, 98023, 89320, 98032
(A) 98230, 98023, 89320, 98032
(B) 89320, 98230, 98032, 98023
(C) 89320, 98032, 98023, 98230
(D) 89320, 98023, 98032, 98230
33. The descending order of the numbers 45405, 45450, 45504, 45449 is :
(A) 45504, 45450, 45449, 45405
(B) 45405, 45449, 45450, 45504
(C) 45450, 45504, 45405, 45449
(D) 45504, 45405, 45449, 45450
34. Which of the following number is the largest ? 45600, 45606, 46506, 40566
(A) 45600 (B) 45606 (C) 46506 (D) 10566

5. Classification of Numbers

35. What is the sum of the first four prime numbers ?
(A) 10 (B) 11 (C) 26 (D) 17
36. Which of the following statement is correct ?
(A) Zero is an odd number
(B) Zero is an even number
(C) Zero is a prime number
(D) Zero is neither odd nor even number
37. The largest prime number of 2 digits is :
(A) 93 (B) 97 (C) 91 (D) 99
38. How many prime numbers of 2 digits will be there whose each digit is also a prime number ?
(A) 3 (B) 4 (C) 6 (D) 9
39. All natural numbers and 0 are called as Numbers.
(A) Rational (B) Integers (C) Whole (D) Prime
40. The sum of the smallest even and smallest odd prime number is :
(A) A composite number (B) An even number
(C) A prime number (D) None of these
41. - 5 is a
(A) Integer (B) Prime number
(C) Composite number (D) None of the above
42. Which of the numbers are twin prime?
(A) (5, 7) (B) (18, 25) (C) (11, 17) (D) (23, 62)
43. The smallest natural number is :
(A) 0 (B) - 1 (C) 2 (D) 1
44. Sum of all the prime numbers between 10 and 25 is :
(A) 72 (B) 83 (C) 66 (D) 70
45. Which of the following numbers are co-prime ?
(A) (14, 35) (B) (18, 25) (C) (31, 93) (D) (23, 69)
46. By using the digit 9, 8 and 0 (When every digit can be used only once) how many natural numbers can be made ?
(A) 4 (B) 7 (C) 8 (D) 10
47. The even prime number is :
(A) 2 (B) 6 (C) 4 (D) 8
48. The sum of first eight prime numbers is?
(A) 76 (B) 78 (C) 77 (D) 79
49. I am a prime number. If you subtract 1 from me, I will become divisible by 9. Who am I ?
(A) 29 (B) 19 (C) 17 (D) 11
50. The smallest composite number is :
(A) 4 (B) 1 (C) 9 (D) 6
51. The sum of all prime numbers between 58 and 68 is
(A) 179 (B) 178 (C) 187 (D) 183
52. How many three-digit numbers are there in all ?
(A) 900 (B) 999 (C) 499 (D) 566

6. Approximate Value of Numbers

53. Find the nearest value to ten thousands of 56789 and 98765 :
(A) 59000, 10009 (B) 60000, 100000
(C) 59900, 10080 (D) 62000, 10675

54. The difference between the nearest thousands value of 14510 and the nearest Hundreds value of 8849 is :
 (A) 5200 (B) 5700 (C) 6200 (D) 6150
55. What is nearest value to tens place of number 12056 ?
 (A) 12000 (B) 12060 (C) 12100 (D) 12150
56. The expenditure of a family per month is as follows :
 Kitchen = ₹ 9,378
 Education = ₹ 3,780
 Conveyance = ₹ 2,817
 Sundry Expenses = ₹ 4,388.
 Rounded off total monthly expenditure of the family to the nearest thousand is :
 (A) ₹ 21,000 (B) ₹ 24,000
 (C) ₹ 20,000 (D) ₹ 23,000
57. Sumit weighs 107 kg and Sanjay weighs 82 kg. The difference of their weight if the weight of each is rounded off to the nearest tens is :
 (A) 30 kg (B) 100 kg (C) 40 kg (D) 20 kg

7. Predecessor and Successor of a Numbers

58. If a is predecessor of b , then find the value of $(a - b)$ and $(b - a)$:
 (A) -1 and 1 (B) 1 and -1
 (C) 0 and -1 (D) 1 and 0
59. The difference between the predecessor and the successor of one million is _____.
 (A) 1 (B) 2
 (C) 1,000,000 (D) 1000001

8. Divisibility Test of Numbers

60. Which of the following number is completely divisible by 18 ?
 (A) 444444 (B) 555555 (C) 666660 (D) 666666
61. The sum of its digits is subtracted from a number. The resulting number will always be divided :
 (A) By 2 (B) By 5 (C) By 8 (D) By 9
62. How many numbers are there between 1 and 100 which are completely divisible by 6 ?
 (A) 15 (B) 17 (C) 16 (D) 19
63. 297144 is divisible by :
 (A) 3 (B) 6 (C) 9 (D) 3, 6 and 9
64. The largest 4-digit number divisible by 459 is :
 (A) 9639 (B) 9999 (C) 9759 (D) 9649
65. The largest 3-digit number divisible by 29 is :
 (A) 999 (B) 957 (C) 968 (D) 986
66. The largest 3-digit number divisible by 19 is :
 (A) 969 (B) 998 (C) 988 (D) 999
67. Find the smallest 3 digit number which is completely divisible by 15?
 (A) 999 (B) 101 (C) 105 (D) 909

68. Which of the following option is correct?
 (i) If the number is divisible by 3, it must be divisible by 9.
 (ii) If the number is divisible by 8, it must be divisible by 4.
 (A) (i) True and (ii) True (B) (i) True and (ii) False
 (C) (i) False and (ii) True (D) (i) False and (ii) False
69. Find the sum of all numbers less than 27 which are divisible by 9 :
 (A) 18 (B) 54 (C) 27 (D) 36
70. What least value must be given to *so that the number $3*63504$ is divisible by 11?
 (A) 0 (B) 2 (C) 3 (D) 4
71. Which one of the following number is divisible by 3?
 (A) 8003 (B) 6896 (C) 4878 (D) 2690
72. The number of two digit natural numbers is :
 (A) 69 (B) 90 (C) 91 (D) 99
73. The sum of the digits of a number is subtracted from the number. The resulting number is always divisible by :
 (A) 2 (B) 7 (C) 5 (D) 9
74. The sum of three consecutive odd numbers is always divisible by :
 (A) 3 (B) 9 (C) 15 (D) 21
75. The least number of 4 digits exactly divisible by 7 is
 (A) 1007 (B) 1001 (C) 1,006 (D) 1009

9. Miscellaneous

76. If the sum of numbers of each row, each column and each diagonal is same, then write the values of a , b and c respectively.
- | | | |
|---|-----|-----|
| 8 | 1 | a |
| 3 | b | c |
| 4 | 9 | 2 |
- (A) 6, 5, 7 (B) 5, 6, 7 (C) 7, 6, 5 (D) 6, 7, 5
77. The addition of two numbers is 234560. If one number is Ten thousand ten more than another number, then what will be the larger number ?
 (A) 112275 (B) 122285 (C) 132285 (D) 117280
78. The difference in the largest odd number and smallest odd number of 5 digits which is formed by 0, 3, 6, 7 and 9 (repetition of digits is not allowed) ?
 (A) 66951 (B) 66924 (C) 20700 (D) 19564
79. If product of three numbers is 6720, out of these product of two numbers is 240, then the third number is :
 (A) 28 (B) 24 (C) 16 (D) 15
80. To complete the division, choose two numbers from the given box.
- 4, 5, 9, 31, 38, 44, 48, 132
- $\square \div \square = 11$
 (A) 132, 12 (B) 99, 9 (C) 44, 4 (D) 38, 5
81. What is the sum of prime numbers less than 25?
 (A) 78 (B) 75 (C) 77 (D) 100

82. The difference between the greatest and the smallest 5-digit numbers, formed by the digits 0, 3, 6, 7 and 9 without repetition, is :
 (A) 93951 (B) 67061 (C) 66951 (D) 60840
83. If a 4-digit number $2xy8$ is exactly divisible by 3, then which of the following is the least value of $(x + y)$?
 (A) 2 (B) 4 (C) 6 (D) 5
84. Which of the following can give the result as 'the square of a natural number n '?
 (A) Sum of the squares at first n natural numbers.
 (B) Sum of the first n natural numbers.
 (C) Sum of the first $(n - 1)$ natural numbers.
 (D) Sum of the first ' n ' odd natural numbers
85. X is a two-digit number, Y is the number obtained on reversing the digits of X. Which of the following is true ?
 (A) $X + Y$ is divisible by 10.
 (B) $X - Y$ is divisible by 6.
 (C) $X - Y$ is divisible by 9.
 (D) $X + Y$ is divisible by 8.
86. Which of the following is not true ?
 (A) $8/7 + 3/8 = 3/8 + 8/7$ (B) $8/7 \times 3/8 = 3/8 \times 8/7$
 (C) $8/7 \div 3/8 = 8/7 \times 8/3$ (D) $8/7 - 3/8 = 3/8 - 8/7$
87. How many natural numbers exist between the squares of 28 and 29 ?
 (A) 30 (B) 58 (C) 56 (D) 60
88. The nature of $(-5 + 2\sqrt{5} - \sqrt{5})$ is :
 (A) natural (B) integer (C) rational (D) irrational
89. The sum of a two digit number and the number obtained by reversing the digits is 55. If the digits of the number differ by 1, find the number :
 (A) 32 (B) 12 (C) 76 (D) 34
90. Which type of numbers are NOT co-prime?
 (A) Any two consecutive even numbers
 (B) Any two consecutive odd numbers
 (C) Any two prime numbers
 (D) Any two consecutive number
91. Which of the following pairs of numbers are relatively prime?
 (A) 24 and 68 (B) 24 and 92
 (C) 39 and 68 (D) 24 and 38
92. Which of the following pairs represents the co-prime numbers ?
 (A) (15, 235) (B) (51, 441)
 (C) (15, 141) (D) (15, 94)
93. How many Prime numbers are there between 40 and 50?
 (A) 3 (B) 2 (C) 5 (D) 4
94. Two consecutive natural numbers are always.....
 (A) even numbers (B) co-prime numbers
 (C) odd numbers (D) prime numbers
95. Which of the following is a prime number ?
 (A) 701 (B) 679 (C) 657 (D) 697
96. If the sum of all the prime numbers is 'x' and that of all the odd prime numbers is 'y', then what is the value of $x - y$?
 (A) 0 (B) 2 (C) ∞ (D) 1
97. The sum of three consecutive even numbers is always divisible by _____.
 (A) 12 (B) 6 (C) 18 (D) 24
98. The face value of 6 in 16008 is :
 (A) 6000 (B) 6 (C) 60 (D) 600
99. The number 5769116 is divisible by which of the following numbers?
 (A) 4 (B) 8 (C) 12 (D) 5
100. The sum of three consecutive odd numbers is always divisible by _____.
 (A) 3 (B) 9 (C) 15 (D) 21
101. How many hundreds are there in 25347 ?
 (A) 300 (B) 253 (C) 2534 (D) 25300
102. What is the difference of the place values of two 7s in the number 276875 ?
 (A) 69993 (B) 699730 (C) 699970 (D) 69930
103. Two third of three twentieth is :
 (A) Two twentieth (B) Three tenth
 (C) One twentieth (D) Four tenth
104. What is the difference between the face value of the number 7 in the numbers 4782 and 32170.
 (A) 630 (B) 712 (C) 0 (D) 770
105. What will be the remainder when 10011 is divided by 101 ?
 (A) 9 (B) 11 (C) 12 (D) 13
106. The product of the place values of two sixes in 786364 is :
 (A) 36 (B) 36000 (C) 360000 (D) 6060
107. The sum of place values of 5 in 6251, 6521 and 5621 is :
 (A) 550 (B) 15 (C) 5550 (D) 5050

All Chapterwise Questions (PYQs) From Previous Year 2018 to 2025

1. Mathematical Terminology

1. A number written in Roman Numerals LXXIX-XXXIX is equal to :
 (A) XL (B) XXIX (C) CLX (D) XC
[Sainik 2025]
2. Which of the following is the correct representation of 446 in Roman Numerals ?
 (A) CLXXVI (B) DCXLVI
 (C) CDXLVI (D) CCXLVI
[Sainik 2025]
3. Sum of all the prime numbers between 1 and 60 having 3 as the unit digit is :
 (A) 78 (B) 168 (C) 135 (D) 129
[Sainik 2025]
4. Which of the following is the correct representation, using Roman Numerals of the number 199?
 (A) ICC (B) CLXXXIX
 (C) CXCIX (D) ICCCD
[Sainik 2024]

5. A number written using Roman Numerals (XXI – XV) – VI + MCLXXIII is equal to :
 (A) MCLXXIII (B) MCLXVII
 (C) MCL (D) MCXLIII

[Sainik 2024]

6. Which of the following is the correct representation for number 99 ?
 (A) IC (B) XCVIII
 (C) XCIX (D) L + XXXIX

[Sainik 2023]

7. Fill in the blank with the correct option.

$$CCCXC + LIX = \dots\dots\dots$$

- (A) CCCCXLIX (B) CDXLIX
 (C) CDCXLIX (D) CDXXXIX

[Sainik 2022]

8. Seventy six lakh four thousand eighty three is written as in the international number system.
 (A) 7,640,083 (B) 76,483
 (C) 7,60,483 (D) 76,04,083

[Sainik 2023]

9. Which of the following numbers in Roman Numerals is incorrect ?
 (A) LXII (B) XCI (C) LC (D) XLIV

[Sainik 2021]

10. In Roman numeration, if a symbol is repeated, its value is not multiplied as many times as it occurs.
 (A) True (B) False
 (C) Cannot say (D) Both are equal

[Sainik 2021]

11. Write Roman numeral CDXXXIX in Arabic numeral.

- (A) 439 (B) 449 (C) 529 (D) 539

[Sainik 2020]

12. Write Roman numerals CDXLIX in Arabic numerals :

- (A) 569 (B) 449 (C) 549 (D) 469

[Sainik 2018]

2. Digits of Numbers

13. The sum of the greatest 4 - digit number and the smallest 3-digit number is :
 (A) 10000 (B) 10110 (C) 10099 (D) 10999

[Sainik 2024]

14. Find the sum of 4-digit greatest number and 6-digit smallest number, each having 3 different digits.

- (A) 109999 (B) 109989 (C) 110020 (D) 1000989

[Sainik 2023]

15. Subtract 28,576 from the sum of the least and the greatest 5-digit number formed using the digits 3, 0, 5, 8 and 1.

- (A) 67,092 (B) 84,563 (C) 68,932 (D) 73,695

[Sainik 2023]

16. Choose the smallest possible 7-digit number that you can form using each of the following digits 5, 1, 8, 0, 3 :

- (A) 1310058 (B) 1001358 (C) 1130058 (D) 1000358

[Sainik 2022]

17. Find the difference between the greatest and the least number that can be written using the digits 6, 2, 7, 4, 3 each only once.

- (A) 52965 (B) 53965 (C) 52956 (D) 52659

[Sainik 2020]

18. The greatest 8-digit number using the digits 5, 8, 7, 5, 2, 0, 6 and 1 is :

- (A) 88765210 (B) 87765210
 (C) 88765521 (D) 87655210

[Sainik 2018]

19. The smallest odd number formed by using the digits 1, 2, 3, 4 and 5 is :

- (A) 12345 (B) 12435 (C) 12453 (D) 12534

[Sainik 2018]

3. Place Value and Face Value

20. The product of Place-value and Face value of digit 6 in the number 7860443 is

- (A) 3652800000 (B) 3600000000
 (C) 3626580000 (D) 360000

[Sainik 2023]

21. In 563672, the place value of 6 at the ten thousands place is times the place value of 6 at the hundreds place.

- (A) 1000 (B) 100 (C) 10 (D) 10000

[Sainik 2022]

22. Sum of place values of the underlined digits in the given number is

$$69528\underline{1} \quad \underline{5}348573$$

- (A) 305071 (B) 300551 (C) 305017 (D) 3005071

[Sainik 2022]

4. Comparison of Numbers

23. Total how many 5 digit numbers are there ?

- (A) 89,900 (B) 89,000 (C) 89,9999 (D) 90,000

[Sainik 2025]

24. Find the smallest five digit number using three different digits.

- (A) 10000 (B) 20000 (C) 00021 (D) 10002

[Sainik 2025]

25. Which of the following numerals are arranged in ascending order ?

- (A) 6821, 6862, 6261, 2861
 (B) 9075, 7905, 9701, 5907
 (C) 10529, 12049, 12509, 15249
 (D) 23124, 23213, 21467, 2764

[Sainik 2022]

26. Choose the correct option if number 52806, 52086, 52860, 52800 and 58260 are arranged in ascending order.

- (A) 52086 < 52806 < 52860 < 52800 < 58260
 (B) 52800 < 52860 < 52086 < 58260 < 52806
 (C) 52086 < 52800 < 52806 < 52860 < 58260
 (D) 52800 < 52806 < 52860 < 52086 < 58260

[Sainik 2018]

5. Classification of Numbers

27. In the given question two statements Assertion (A) and Reason (R) are given.

Read them carefully and choose the correct option from the given options.

Assertion (A) : 41 is a prime number.

Reason (R) : It has only two factors- number 1 and the number itself.

- (A) (A) is not correct but (R) correct
 (B) Both (A) and (R) are correct and (R) is the correct explanation of (A)
 (C) Both (A) and (R) are correct but (R) is not the correct explanation of (A).
 (D) (A) is correct but (R) is not correct

[Sainik 2025]

28. The sum of all prime number, less than 21, is :
 (A) 77 (B) 67 (C) 41 (D) 48

[Sainik 2024]

29. Which of the following statements are NOT correct?
 (1) Composite numbers are always even
 (2) Prime numbers are always odd.
 (3) Sum of two prime numbers is always prime.
 (4) Product of two composite numbers is always composite.
 (A) 1 and 4 only (B) 2 and 3 only
 (C) 1, 2 and 3 only (D) 1, 2, 3 and 4

[Sainik 2024]

30. A pair of twin prime number between 70 and 100 is
 (A) 71, 73 (B) 79, 83 (C) 97, 99 (D) 87, 89

[Sainik 2023]

6. Approximate Value of Numbers

31. Rounding off 7348561 to the nearest hundred is
 (A) 7348000 (B) 7348600 (C) 7348560 (D) 7348500
32. Estimate the product 5980×428 by rounding off each number to the nearest hundreds.
 (A) 236000 (B) 240000 (C) 2400000 (D) 3000000
33. Round off 37507 to the nearest hundreds is :
 (A) 37500 (B) 37000 (C) 38000 (D) 30000

[Sainik 2018]

7. Predecessor and Successor of a Numbers

34. The successor of 1 million is :
 (A) 2 millions (B) 1000001 (C) 100001 (D) 10001
35. The product of a non-zero whole number and its successor is always :
 (A) Divisible by 3 (B) An odd number
 (C) A prime number (D) An even number

[Sainik 2020]

8. Divisibility Test of Numbers

36. Which of the following statements are correct ?
 (1) If a number is divisible by 4, it must be divisible by 8.
 (2) If a number is divisible by 3 and 5, then it is divisible by 15 also.
 (3) A number which is divisible by 2 and 8 is divisible by 16 also.

- (4) The sum of two consecutive odd numbers is always divisible by 4.

- (A) Only (2), (3) and (4) (B) Only (1), (2), and (4)
 (C) Only (2) and (3) (D) Only (2) and (4)

[Sainik 2025]

37. Which of the following numbers is divisible by 3 ?
 (A) 518932 (B) 117342 (C) 213454 (D) 337625

[Sainik 2024]

38. The smallest 5-digits number that is divisible by 19 is :
 (A) 10019 (B) 10013 (C) 10032 (D) 10000

[Sainik 2018]

9. Miscellaneous

39. A rod of length 15 meter 8 cm is divided into 4 equal parts. The length of each part of the rod is :

- (A) 3.65 m (B) 3.77 m (C) 3.95 m (D) 3.88 m

[Sainik 2025]

40. Select values of m, n to make the statement true.

$$127 \times 15 = (\dots m \dots \times 15) + (\dots n \dots \times 15)$$

- (A) $m = 100, n = 15$ (B) $m = 120, n = 15$
 (C) $m = 15, n = 27$ (D) $m = 100, n = 27$

[Sainik 2022]

41. I am a five-digit even number. I have 9 at my tens place. The digit at the ten thousands place is three less than the digit at the tens place. The digit at the hundreds place is half the value of the digit at the ten thousand place. The digit at the thousand place is double the digit at the ones place. Who am I ?

- (A) 68494 (B) 61392 (C) 64391 (D) 68394

[Sainik 2022]

42. Ram, Rahul and Rohit shared a bag of marbles. The bag had 272 marbles. How many marbles were left over after the friends shared them equally ?

- (A) 90 (B) 91 (C) 9 (D) 2

[Sainik 2020]

43. There are 17 rooms in a school, every room has two fans and four LED bulbs. How many switches are required for the school if every fan requires a switch and one switch is required for every two bulbs ?

- (A) 34 (B) 68 (C) 102 (D) 17

[Sainik 2019]

44. Which of the following two-digit number when added to 27, gets reversed ?

- (A) 27 (B) 24 (C) 47 (D) 70

[Sainik 2019]

45. A tall office building has 85 floors. Each floor has 48 windows. Each window is to be decorated with 64 tiny bulbs. How many bulbs would be needed to decorate all the windows ?

- (A) 261120 (B) 273920 (C) 456960 (D) 209920

[Sainik 2018]

□□