

# Math-n-Coding Tech Competition (MCTC) – 2021

## Syllabus Group 2

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## 1. Data Handling

Data handling is a set of skills, which includes, collecting data, keeping records of data, analysis of data, and sharing data.

### Includes

*Quantitative and Qualitative data handling*

### Example 1

**Question** - The width or size of the class interval 30 - 40 is \_\_\_\_\_

- A) 20
- B) 10
- C) 30
- D) 70

**Answer – B**

Width of class interval = upper class limit - lower class limit  
=  $40 - 30 = 10$

### Example 2

**Question** – In a bar chart, a bar of length 4 cm is drawn. If 1 cm = 1.5 l, what will 4 cm be?

- A) 3 l
- B) 6 l
- C) 5 l
- D) 9 l

**Answer – B**

1 cm = 1.5 l, 2 cm = 3 l, 3 cm = 4.5 l, 4 cm = 6 l.

## 2. Logical Sequence

Logical sequence means, a sequence of instructions that have been designed to be executed one after the other.

It forms the part of reasoning ability. As the name suggests, we need to think logically.

### Includes

*Alpha-numeric sequence, ranking sequence, time sequence etc.*

### Example 1

**Question** – What will come at the place of question mark?

1, 9, 25, 49, \_?\_, 121.

- A) 100
- B) 81
- C) 91
- D) 64

### Answer – B

A square number is the result when a number has been multiplied by itself.

1, 3, 5, 7, **9**, 11

### Example 2

**Question** – Choose the most meaningful sequence for the following words.

1. Job 2. Independence 3. Study 4. Income 5. Exam

- A) 1, 4, 2, 3, 5
- B) 2, 5, 3, 1, 4
- C) 3, 1, 2, 4, 5
- D) 3, 5, 1, 4, 2

### Answer – D

Please check the general flow growth.

### 3. Cause & Effect

We observe cause-&-effect relationships are all around us but identifying them in mathematics can sometimes be difficult for students. Students need consistent and meaningful practice working with problems that deal with cause-&-effect relationships.

#### Example 1

**Question** – Standard of living among the middle-class society is constantly going up since part of few years. Indian Economy is observing remarkable growth.

- A) Statement I is the cause and statement II is its effect.
- B) Statement II is the cause and statement I is its effect.
- C) Both the statements I and II are independent causes.
- D) Both the statements I and II are effects of independent causes.

#### Answer – A

Since the standard of living among the middle-class society is constantly going up so Indian Economy is observing remarkable growth.

#### Example 2

**Question** – Large number of Primary Schools in the rural areas is run by only one teacher. There has been a huge dropout from the primary schools in rural areas.

- A) Statement I is the cause and statement II is its effect.
- B) Statement II is the cause and statement I is its effect.
- C) Both the statements I and II are independent causes.
- D) Both the statements I and II are effects of independent causes.

#### Answer – A

Since large numbers of primary schools in the rural areas are run by only one teacher so there has been a huge dropout from the Primary Schools in rural areas.

#### 4. Speed & Distance

The concept of Speed, Time and Distance is used extensively for questions relating to different topics such as motion in a straight line, circular motion, boats and streams, races, clocks, etc.

##### Example 1

**Question** – Nikita takes as much time in running 18 meters as a car takes in covering 48 meters. What will be the distance covered by Nikita during the time the car covers 1.6 km?

- A) 480 m
- B) 520 m
- C) 600 m
- D) 800 m

**Answer – C**

Distance covered by Amar =  $18/4.8 (1.6\text{km}) = 3/8(1600) = 600 \text{ m}$

##### Example 2

**Question** – Sagar was riding bike towards north, turned left road 1 km turns towards left & road 2 kms found himself 1 km west of starting. How far did he road north?

- A) 1.5 kms
- B) 2 kms
- C) 3 kms
- D) 3.5 kms

**Answer – B**

**Solution:**

He travelled total distance of 3 kms. From which he travelled 1 km in west. Hence in all he travelled total 2 kms in north.

## 5. Ratio & Proportion

A ratio is a comparison of two quantities. Proportion is an equation which defines that the two given ratios are equivalent to each other.

### Example 1

**Question** – The cost of a pen is ₹ 10. The cost of a pencil 1 is ₹ 2. How many times of the cost of a pencil is the cost of a pen?

- A) 5 times
- B) 2 times
- C) 10 times
- D) None of above

**Answer** – A

**Explanation:**  $10 = 5 \times 2$

### Example 2

**Question** – There are 20 teachers in a school of 500 students. The ratio of the number of teachers to the number of students is \_\_\_\_

- A) 1:20
- B) 1:50
- C) 1:25
- D) 25:1

**Answer** – C

**Explanation:**

$20: 500 = 20/500 = 1/25 = 1: 25$



## Start Competing, Start Succeeding!

A complete MCTC program is designed with the technique that emphasizes on basic mathematics and light coding concepts, principles and real time scenarios.

We choose basic fundamental topics for this competition like general math, quantitative aptitude, logical reasoning and fundamentals of programming etc.

Most of the topics are from your regular syllabus, so you don't need to do separate preparation for this exam and that is the beauty of this competition...

Students know mathematics and computer science better than most adults. It has become the easiest way they learn, because it is such an integral part of their life.

The students of this generation are considered technological learners. They learn best being more interactive, and technology is what helps them do that.

In case of any query, please feel free to share your valuable inputs on [events@fabsoftwarestock.com](mailto:events@fabsoftwarestock.com)



Thank you!