ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-1

CLASS 7

# NUMBER SYSTEM

**A. Tick (✓) the correct option.**

1. In binary addition, 1 + 1 = ..... .
   a. 0 ☐ b. 10 ☐
   c. 1 ☐ d. 11 ☐
2. Which of the following is a valid octal number?
   a. 183 ☐ b. 965 ☐
   c. 983 ☐ d. 345 ☐
3. In binary number system, 1 Nibble is equals to ..... .
   a. 4 bits ☐ b. 8 bits ☐
   c. 16 bits ☐ d. 1 bit ☐
4. The digital computer represents all kinds of data and information in ..... numbers.
   a. binary ☐ b. decimal ☐
   c. hexadecimal ☐ d. None of these ☐

**B. Define the following:**

1. Number system- .....
2. Radix- .....
3. Binary addition- .....

**C. Convert the decimal number 44 into binary number.**

.....

.....

.....

.....

Grade: ☆ ☆ ☆ ☆ ☆

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Computer Genius!

Chapter-1

CLASS 7

# NUMBER SYSTEM

**A. Match the following:**

| | | | |
|---|---|---|---|
| 1. | Binary number system | a. | base 16 |
| 2. | Octal number system | b. | base 2 |
| 3. | Decimal number system | c. | base 8 |
| 4. | Hexadecimal number system | d. | base 10 |

**B. Circle the correct option.**

1. The digital computer represents all kinds of data and information in (binary / octal) numbers.
2. The (binary / decimal) number system consists of ten digits from 0 to 9.
3. (Decimal / Octal) number system is used as a shorthand representation of long binary numbers.
4. The (hexadecimal / octal) number system consists of 16 digits from 0 to 9 and A to F.
5. There are (four/five) types of number systems.

**C. Write the full forms of the following:**

1. MSD – .....
2. LSD – .....

**D. Extract the binary number from the given example and write below:**

| | |
|---|---|
| 2 | 64 – 0 |
| 2 | 32 – 0 |
| 2 | 16 – 0 |
| 2 | 8 – 0 |
| 2 | 4 – 0 |
| 2 | 2 – 0 |
| | 1 – 0 |

Binary number is: .....

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ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-2

CLASS 7

## APP DEVELOPMENT

**A. Tick (✓) the correct option.**

1. Which of the following uses apps?
   a. Hand-held devices ☐ b. Laptops ☐
   c. Desktop ☐ d. None of these ☐
2. ..... developed Android.
   a. Google ☐ b. Playstore ☐
   c. Apple Inc. ☐ d. Microsoft ☐
3. ..... platform dependent apps.
   a. Native apps ☐ b. Hybrid apps ☐
   c. Web apps ☐ d. None of these ☐
4. ..... is not a gaming app.
   a. Talking tom ☐ b. PUBG ☐
   c. Angry Birds ☐ d. Candy Crush ☐
5. Which of the following is an appstore for android devices.
   a. App Store ☐ b. Microsoft Store ☐
   c. Play Store ☐ d. All of these ☐

**B. Write 'T' for true and 'F' for false.**

1. Apps were not developed for desktops. .....
2. Linux is a desktop operating system. .....
3. Native apps require hand-held devices for installation. .....
4. Mobile apps cannot be used without internet connectivity. .....
5. Apps in the Google Play Store are not verified and certified by Google. .....

Grade: ☆ ☆ ☆ ☆ ☆

Teacher's Signature: _____

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Chapter-2

# APP DEVELOPMENT

## A. Fill in the blanks using the hints given below.

**Hints:** hand-held, mobile app, web, native, mobile

1. Hybrid apps created by combining the features of ..... and .....apps.
2. Android application is developed for ..... devices such as smartphones and tablets.
3. Android is an operating system for ..... devices developed by Google.
4. To use a ....., you need to install it first.

## B. Answer the following questions:

1. What is an application?

   .....

2. Define web apps.

   .....

3. State a difference between a web app and a native app.

   .....

4. State a benefit of e-commerce app.

   .....

## C. Guess who am I?

1. I am an app store developed by Google. .....
2. I am an app store developed by Apple Inc. .....
3. I am a free app development tool, provided by Google. .....
4. I am a mobile operating system developed by Apple Inc. .....

ORANGE

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Computer Genius!

Chapter-3

CLASS 7

# ADVANCED FEATURES OF EXCEL 2016

**A. Read the clues and answer the following:**

1. It is used to highlight cells that contain values greater than a particular value. .....
2. It is a way to arrange the data in ascending or descending order. .....
3. It is used to separate unwanted material from a mixture. .....
4. It is a shortcut key used to print the worksheet. .....

**B. Circle the correct option.**

1. The Add Level button is available under (Insert tab / Sort dialog box).
2. The (Conditional / Optional) Formatting option is available in Styles group under the Home tab.
3. The (Highlight Cells Rules / Data Bars) option is selected when you want to highlight all cells satisfying a given condition.
4. The filters once applied (can / cannot) be easily removed.

**C. Write the name of the command used to:**

1. Add colour schemes to all selected cells slowly varying from top to bottom items.

   .....

2. Add icon sets to show which cells are acceptable, which are moderate and which need attention.

   .....

3. Add data bars to the cells having numeric data.

   .....

**D. Name the following icons:**

1. ..... 2. .....

Grade: ☆ ☆ ☆ ☆ ☆

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# ADVANCED FEATURES OF EXCEL 2016

## A. Tick (✓) the correct option.

1. We use Sort A to Z option to sort ..... .

   a. Numbers ☐ b. Symbols ☐

   c. Text ☐ d. All of these ☐

2. Sort & Filter command exist under which tab of Editing group?

   a. Home ☐ b. Formula ☐

   c. Insert ☐ d. Review ☐

3. The Sort smallest to largest option is used to sort ..... .

   a. Numbers ☐ b. Symbols ☐

   c. Text ☐ d. None of these ☐

4. Sort & Filter group exist under the which tab?

   a. Home ☐ b. Data ☐

   c. Both (a) and (b) ☐ d. None of these ☐

## B. Explain the following:

1. Conditional Formatting- .....

   .....

2. Custom Sort - .....

   .....

3. Sorting - .....

   .....

ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-4

CLASS 7

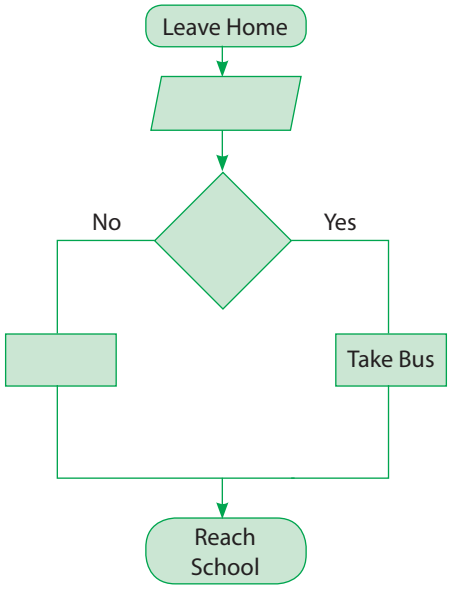
# CODING AND FLOWCHART

**A. Write 'T' for true and 'F' for false.**

1. Rectangle is used to show the start and stop points of the flowchart. .....
2. Using flowchart problem can be analysed more efficiently. .....
3. While drawing flowcharts we have to use standard symbols. .....

**B. Complete the following flowchart to reach school on time:**

Check time  Before 7AM  Take Metro




**C. Answer the following questions:**

1. Define Algorithm.

.....

.....

2. Write any one advantage and disadvantage of using flowcharts.

.....

.....

Grade: ☆ ☆ ☆ ☆ ☆

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Chapter-4

CLASS 7

# CODING AND FLOWCHART

**A. Re-write the following sentences correctly:**

1. Flowchart doesn't help in debugging and testing process.

.....

2. An algorithm can be only represented with the help of flowcharts.

.....

3. Diamond symbol can be used to input the information in the flowchart.

.....

**B. Complete the following sentences:**

1. In a flowchart ..... represent the direction of flow among the steps.
2. An algorithm can be represented in ..... as well as .....
3. While drawing flowcharts we have to work in a ..... direction.

**C. Answer the following questions:**

1. What type of symbols are used for the flowchart?

.....

.....

2. Create a flowchart to find out whether the current year is a leap year or not.

.....

.....

ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-5

CLASS 7

# ADVANCED MAKECODE ARCADE

**A. Tick (✓) the correct option.**

1. What does the 'continue' statement do?
   a. Starts a loop ☐ b. Ends a loop ☐
   c. Skips to next iteration ☐ d. Restarts a loop ☐
2. Where are custom functions defined in MakeCode?
   a. Math blocks ☐ b. Loop blocks ☐
   c. Advanced blocks ☐ d. Logic blocks ☐
3. What do text blocks allow generating?
   a. Images ☐ b. Dialogue ☐
   c. Scores ☐ d. Levels ☐
4. Which blocks help debug code in MakeCode?
   a. Variable blocks ☐ b. Extension blocks ☐
   c. Console blocks ☐ d. Info blocks ☐

**B. Fill in the blanks using the hints given below.**

**Hints:** Game blocks, Else, Loops, Continue

1. ..... pauses the current loop iteration and moves to the next one.
2. Complex algorithms use ..... to reduce repetitive steps.
3. ..... helps manage game timelines and win/lose conditions.
4. The ..... clause executes when an 'if' condition is false.

**C. Write 'T' for true and 'F' for false.**

1. Nested loops have multiple layers of loops. .....
2. Variables hold fixed values that cannot change. .....
3. Data types restrict what values a variable can store. .....
4. The while loop runs indefinitely without an exit criteria. .....

Grade: ☆ ☆ ☆ ☆ ☆

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# ADVANCED MAKECODE ARCADE

## A. Answer the following questions:

1. What is an exit criteria in a loop?

   .....

2. What are the benefits of using sequences in code?

   .....

3. What is a bug?

   .....

4. Give two examples of collections.

   .....

5. What do game blocks allow controlling in MakeCode?

   .....

## B. Match the following:

| | | | |
|---|---|---|---|
| 1. | Modulus | a. | += |
| 2. | Simple assignment operator | b. | /= |
| 3. | Add AND assignment operator | c. | %= |
| 4. | Divide AND assignment operator | d. | *= |
| 5. | Modulus AND assignment operator | e. | % |
| 6. | Multiply AND assignment operator | f. | = |

## C. Write the description of the following operations:

1. Addition - .....
2. Increment - .....
3. Decrement - .....
4. Multiplication - .....

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Chapter-6

# FIELDS WHERE ROBOTS ARE USED

**A. Fill in the blanks using the hints given below.**

**Hints:** Cui Runguan, BigDog, Odaiba, da Vinci, Robonaut 2, Unimate

1. ..... was the first industrial robot used on assembly lines.
2. ..... is a four-legged military robot that can climb stairs.
3. ..... is a customer service robot that works in shopping centers.
4. ..... slices noodles and tosses them into boiling water.
5. The ..... surgical system allows doctors to operate with precision.
6. ..... was designed by NASA for repair and maintenance in space.

**B. Write a short note on the different fields where robots are used.**

1. Security and Surveillance - .....
   .....
   .....
2. Military - .....
   .....
   .....
3. Manufacturing - .....
   .....
   .....
4. Cooking - .....
   .....
   .....

Name: _____

Roll No: _____

Class: _____ Section: _____ Date: _____

# FIELDS WHERE ROBOTS ARE USED

**A. Tick (✓) the correct option.**

1. Which robot helps with security and surveillance?
   a. Spot ☐ b. Atlas ☐
   c. Herbie ☐ d. Flyability ☐
2. Which was the first robot used in manufacturing?
   a. Omnibot 2000 ☐ b. Unimate ☐
   c. Tomy Omnibot ☐ d. PUMA 560 ☐
3. Which robot looks like a tank in the military?
   a. MAARS ☐ b. PackBot ☐
   c. Crusher ☐ d. MULE ☐
4. Which robot can recognize and chat with customers?
   a. Pepper ☐ b. Sophia ☐
   c. Nadine ☐ d. Atlas ☐

**B. Write 'T' for true and 'F' for false.**

1. Flyability is a security drone. .....
2. Unimate worked on assembly lines in the 1960s. .....
3. Nadine is a customer service robot. .....
4. Moley is a sushi chef robot. .....
5. Da Vinci performs simple surgeries. .....
6. Robonaut was the first robot in space. .....

**C. Answer the following questions:**

1. How do robots help with security?

   .....

2. Where was the first industrial robot Unimate used?

   .....

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Computer Genius!

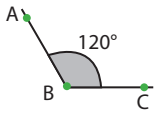
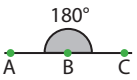
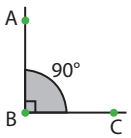
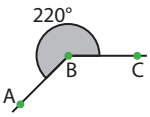


## EXPLORING MATH WITH CODING

**A. Write 'T' for true and 'F' for false.**

1. Strictly Less operator is used if the left value is less than the right value. .....
2. When an angle measure 270 degrees, it will be called as an Obtuse angle. .....
3. Run button is used to get the result of the program. .....

**B. Match the following:**

| Column A | Column B |
|---|---|
| 1. Straight Angle | a.   |
| 2. Reflex Angle | b.   |
| 3. Obtuse Angle | c.   |
| 4. Right Angle | d.   |

**C. Answer the following questions:**

1. What do you understand by the term Nested if-else statements? Also write a program to illustrate it.

.....

.....

2. Define angle and its types.

.....

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## EXPLORING MATH WITH CODING

**A. Fill in the blanks using the hints given below.**

**Hints:** Greater than or equal to, two variable or values, NOT

1. ..... operator reverses the logic of the code when the conditions are false.
2. Relational operators are block of commands that direct the code based on the relation between ..... .
3. ..... operator is used when the left value is greater than or equal to the right value.

**B. Correct the following statements:**

1. OR operator is used when both questions are correct.

   .....

2. When an angle measure exactly 180 degrees is called complete angle.

   .....

3. <=is used when the left value is less than the right value.

   .....

**C. Answer the following questions:**

1. List the number of relational operator that can be used in AI connect with their symbol and descriptions.

   .....

   .....

2. Write a program to find out the number of vowels used in a word "Artificial Intelligence".

   .....

   .....

ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-8

CLASS 7

## EXPLORING SCIENCE WITH CODING-1

**A. Write 'T' for true and 'F' for false.**

1. To calculate speed of an object we use the formula S=D/T. .....
2. Multiplication can only be carried out on Integer. .....
3. m/s is the unit of time. .....

**B. Fill in the blanks using the hints given below.**

**Hints:** directly, inversely, subtraction, divide

1. Speed is ..... proportional to Distance and ..... proportional to Time.
2. ..... operator is used to perform mathematical subtraction of two variables.
3. To convert minutes to hours ..... the number of minutes by 60.

**C. Answer the following questions:**

1. Distinguish between addition and subtraction operators.

   .....

   .....

2. Define Average speed.

   .....

   .....

Grade: ☆ ☆ ☆ ☆ ☆

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# EXPLORING SCIENCE WITH CODING-1

**A. Re-write the following sentences correctly:**

1. To convert kilo meter into miles we divide it by 0.62.

.....

2. The SI unit of speed is feet.

.....

3. Modulus operator is used to perform the mathematical division of two variables.

.....

**B. Match the following:**

| Column A | Column B |
|---|---|
| 1. Time | a. 50 |
| 2. Average Speed | b. Total Distance Travelled/Total Time taken |
| 3. Modulus | c. Distance/Speed |
| 4. (10*5) | d. % |

**C. Answer the following questions:**

1. Define mathematical operator?

.....

.....

2. Write a program to calculate the answer of (97%3).

.....

.....

ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-9

CLASS 7

# EXPLORING SCIENCE WITH CODING-2

**A. Complete the following sentences:**

1. Clinical thermometer bulb contains ..... .
2. The formula to calculate force is ..... .
3. If the value of a solution ranges from 11-13, it will be more likely to ..... nature.

**B. Match the following:**

| Column A | Column B |
|---|---|
| 1.  | a. Alkaline |
| 2.  | b. Force |
| 3.  | c. Acidic |
| 4.  | d. Neutral |

**C. Answer the following questions:**

1. What do you understand by the term clinical thermometer?

   .....

   .....

2. Illustrate second law of motion.

   .....

   .....

Grade: ☆ ☆ ☆ ☆ ☆

Teacher's Signature: _____

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Class: _____ Section: _____ Date: _____

# EXPLORING SCIENCE WITH CODING-2

**A. Re-write the following sentences correctly:**

1. A scientist, named Issac Newton, developed three Laws of Momentum.

.....

2. The elif keyword is equivalent to "if-do" block in AI connect.

.....

3. The pH value of battery is Alkaline in nature.

.....

**B. Fill in the blanks using the hints given below.**

**Hints:** Thermometer, remain, pH, unless

1. ..... is a quantitative measure of the acidity or basicity of aqueous or other liquid solutions.
2. An object in motion will ..... in motion, ..... a net force acts on it.
3. ..... is an instrument used to measure temperature.

**C. Answer the following questions:**

1. Define Force.

.....

2. Write a program to convert the temperature from Fahrenheit into Celsius.

[**Hint:** (°F-32)*5/9]

.....

.....

.....

ORANGE

WORKSHEET 1

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Computer Genius!

Chapter-10

CLASS 7

# AI IN REAL WORLD

## A. Write 'T' for true and 'F' for false.

1. We cannot check if a person is smiling or not using AI. .....
2. Now a days AI is used for security purposes. .....
3. We can create coding of any program with the help of AI. .....

## B. Arrange the following steps in correct sequence

Step 1: Click on the Browse button to select the image from the system and click on submit.

Step 2: Click on the 'Load image' block.

Step 3: After that click on the 'Run' button and check the result.

.....

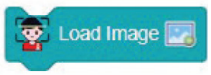
.....

.....

.....

## C. Write the textual code of the following block code.

1. Block Code




Textual code .....

2. Block Code


Textual code

Grade: ☆ ☆ ☆ ☆ ☆

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Computer Genius!

Chapter-10

CLASS 7

# AI IN REAL WORLD

**A. Re-write the following sentences correctly:**

1. Get facial feature block is used to detect a person's eye.

.....

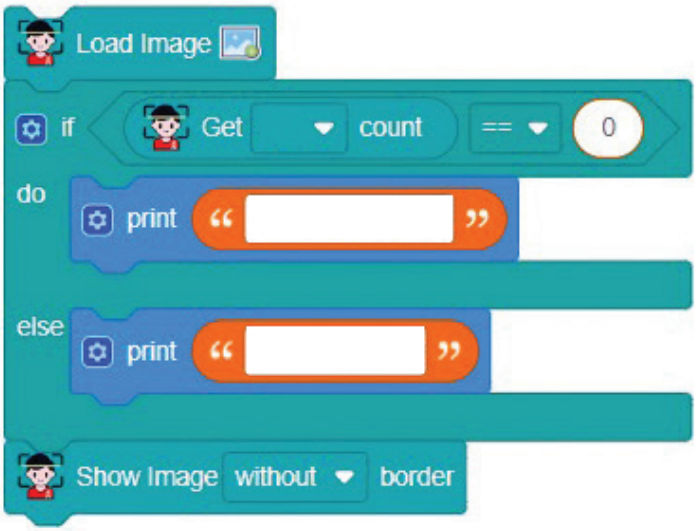
2. For loop command is used in the coding of the program of eye detection.

.....

3. We click on the reset button to check the result.

.....

**B. Complete the following block code to check whether the person is wearing hat or not.**




**C. Answer the following questions:**

1. List some of the applications of AI.

.....

.....

2. Write a short note on AI.

.....

.....

Grade: ☆ ☆ ☆ ☆ ☆

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Computer Genius!

Chapter-11

CLASS 7

## TEXTUAL CODING

**A. Complete the following sentences:**

1. ..... is the basic form of computers programming.
2. A variable is created when a value is assigned with the help of an .....
3. ..... involves writing lines of code.

**B. Match the followings:**

| Column A | Column B |
|---|---|
| 1. Integer | a. bool(_) |
| 2. Print | b. str(_) |
| 3. Boolean | c. int(_) |
| 4. String | d. print(_) |

**C. Answer the following questions:**

1. Differentiate between Power and Modulus operator.

.....

.....

2. Write a program to calculate the sum of even numbers between 12 to 40.

.....

.....

Grade: ☆ ☆ ☆ ☆ ☆

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## TEXTUAL CODING

**A. Re-write the following sentences correctly:**

1. Divide left operand by the right one always result into integer.

   .....

2. A variable can start with a digit.

   .....

3. To print a message on screen, we do not need to enclose them in double quotes.

   .....

**B. Fill in the blanks using the hints given below.**

**Hints:** Boolean, Print, Arithmetic

1. The ..... command can be used to provide the information anywhere in the code.
2. Python uses ..... data types for true and false condition.
3. ..... operations are used in python for performing mathematical operations on variables and values.

**C. Answer the following questions:**

1. Differentiate between print and input command.

   .....

   .....

2. Write the textual code to print your number of marks scored in unit test.

   .....

   .....