Class 6

Answer Key

Computer Genius

1. Safeguarding your Computer

LET'S RECAP (Page no. 7)

2

QUEST (Page no. 16)

1. (d) 2. (b) 3. (a) 4. (c)

EXERCISE

A. 1. (iii) 2. (i) 3. (ii) 4. (iii) 5. (ii) 6. (i)

B. 1. Malware 2. Biometric 3. Disk Cleanup 4. Retina biometrics 5. Password

C. 1. F 2. F 3. T 4. T 5. T

D. 1. Authentication is the process of verifying a user's identity before granting him or her access to a computer system. In private and public computer networks (including the Internet), authentication is commonly done through the use of login passwords. Some of the authentication procedures as follows:

   i. Password Protection
   ii. Biometric Authentication
   iii. Voice Recognition

2. A computer virus is a program that is able to copy itself when it is run. It gets activated each time the program or file to which it is attached is opened or executed. It is the most common type of malware. It can spread itself by infecting other programs or files.

3. a. Trojan Horse: A trojan horse is a dangerous virus. It represents itself as helpful software program. Once the user clicks on it to agree to run it, it gains access to sensitive data and then modifies, blocks, or deletes the data.

   b. Adware: An adware tracks user's browser and download history and keeps popping advertisements on the screen.

4. An infected computer system will:

   i. start displaying unusual messages on the screen

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ii. take more time to load the programs

5. Ways to protect our computer:
   i. Download only legal software
   ii. Use the original version of Windows
   iii. Scan Pen drive, CD and any other external storage device for viruses before opening in computer
6. Different malwares will affect your computer in different ways:
   i. They can crash your hard disk.
   ii. They can destroy all or some of your data.
   iii. They decrease the processing speed of the computer.
   iv. They can reduce or block the memory of the computer or hard disk.

FUN ZONE

A. 1. AVG 2. Norton 3. McAfee

B.

Competency-based/Application-based questions

1. He should scan the pen drive before using it, to protect his computer.
2. I'll suggest him to neither open these emails nor reply to them.

2. Formulas and Functions in Excel

LET'S RECAP (Page no. 21)

Total marks obtained = 95 + 85 + 90 = 270

Maximum marks can be obtained = 100 + 100 + 100 = 300

Average marks = 270/3 = 90

Percentage = (270/300) x 100 = 90%

QUEST (Page no. 28)

1. -500 2. 1250 3. 2400 4. 2

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QUEST (Page no. 34)

1. 5 2. Comp 3. 7 4. 5 5. 3

EXERCISE

A. 1. (i) 2. (i) 3. (ii) 4. (iii)

B. 1. Functions 2. Equal to 3. square root 4. Dollar ($)

C. 1. F 2. F 3. F

D. 1. A cell reference is a cell address that can be used in a formula to denote a specific cell.

2. It returns the length of the text string. Example:

   Input: =LEN("Touch")

   Output: 5

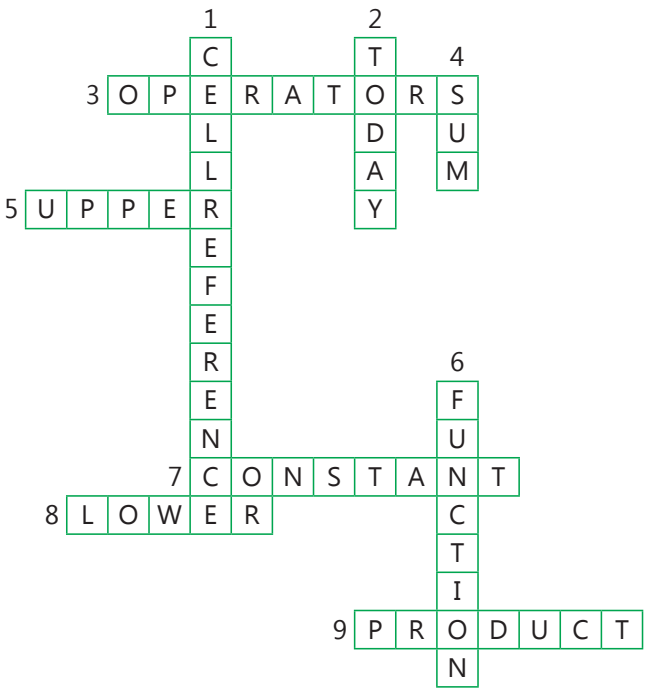
3. Rules for using functions are:

   (i) All Excel functions must begin with = sign

   (ii) Function name must be a valid name.

   (iii) Function must be followed by opening and closing parenthesis.

FUN ZONE



Competency-based/Application-based questions

1. =SUM(range)

2. (This question was printed incorrectly in the book. Please correct it in your textbook.)

Question: Your friend Alisha was using Excel and wants to add the current date and time in it. She doesn't know how to do this. Tell her the appropriate function she can use to do so.

Ans. =NOW()

3. Charts in Excel

LET'S RECAP (Page no. 38)

1. Deepak 2. Anurag

QUEST Page no. 43)

1. Column Chart 2. Pie Chart 3. Area Chart 4. Line Chart

EXERCISE

A. 1. (ii) 2. (i) 3. (iii)

B. 1. column 2. Scatter charts 3. Plot area

C. 1. F 2. F 3. F 4. T

D. 1. (b) 2. (c) 3. (d) 4. (a)

E. 1. a. Data series is related to the set of values. It is represented by the bars or slices that represent the data values.

b. Legend is a key which shows the meanings of symbols and colours used in the chart.

2. Excel can arrange the selected data in either ascending or descending order. This is called sorting of data.

Custom Sorting is used when more than one column is to be sorted in such a way that the first column is in ascending order and if some data is the same for more than one row, then the second column of such rows gets sorted in descending order.

3. To create a chart, follow the given steps:

Step 1: Select the range of cells.

Step 2: Click on the Insert tab.

Step 3: Click on the Insert Column or Bar Chart command.

Step 4: Select the 2-D Column Chart option.

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FUN ZONE

A. Do it yourself.

B. 1. Bar Chart 2. Sorting 3. Ascending Order

Competency-based/Application-based questions

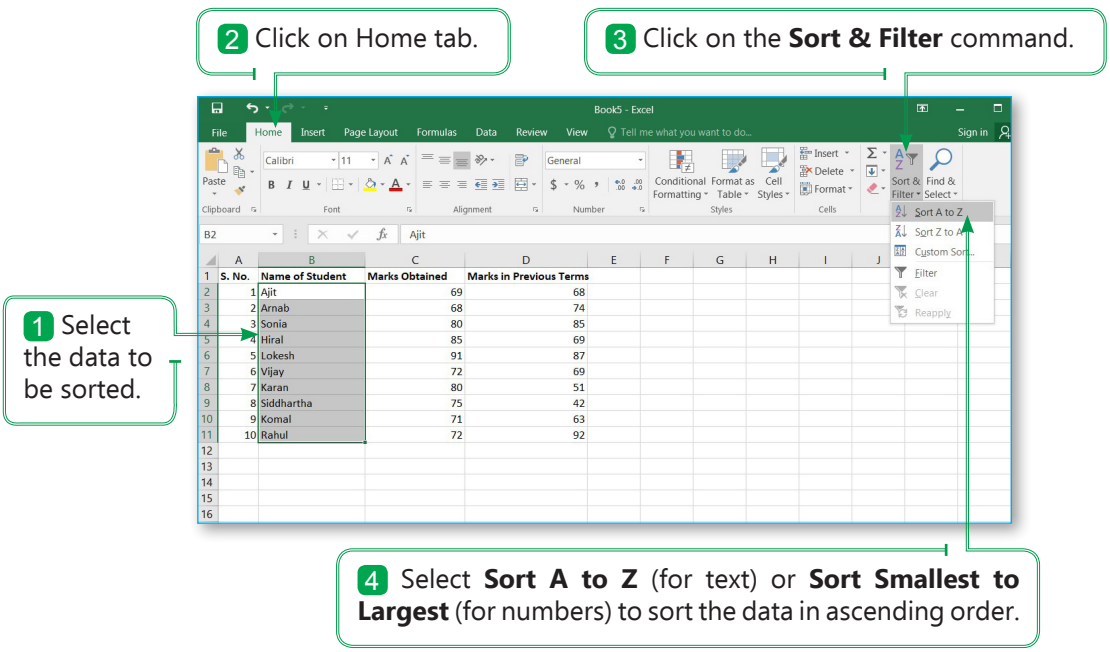
1. Sorting data 2. Sort A to Z

Periodic Assessment 1

(Based on chapters 1 to 3)

A. 1. Code Red Worm 2. Zeus 3. Emotet 4. Pegasus

B.



C. 1. It is used to show trends over a period of time. It is similar to plotting a graph on graph paper with its values on the X and Y axes.

2 The bar chart displays the data in the form of long rectangular rods, also called bars. These bars can be placed horizontally on the chart area.

3. It is used to display the quantitative magnitude of the data graphically. These charts are based on the features of the line chart.

4. Scatter charts are also known as XY scatter plot charts. They show the correlation between the two sets of values.

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5. It is a circular chart divided into sectors where each sector shows the relative size of each value. It always shows only one data series.

4. Advanced Features of PowerPoint 2016

LET'S RECAP (Page no. 49)

1. From Beginning 2. Online Pictures 3. Shapes 4. WordArt

QUEST (Page no. 54)

1. Normal View 2. Slide Sorter View 3. Notes Page View 4. Reading View

QUEST (Page no. 60)

1. AIFF Audio (.aiff), AU Audio (.au)
2. **(This question was printed incorrectly in the book. Please correct it in your textbook.)**
   Question: Find the odd one out.
   i. .mpeg ii. .swf iii. .asf iv. .mp3
   Ans. iv. .mp3

EXERCISE

A. 1. (ii) 2. (iv) 3. (iii) 4. (iii) 5. (i) 6. (ii)

B. 1. Insert 2. Slide 3. text 4. object

C. 1. F 2. F 3. F 4. T 5. T

D. 1. Slide Show view allows to view the presentation in full screen mode.

2 Transition determines how your presentation moves from one slide to the next whereas animation is the special visual effects that you add to text and different objects on a slide.

3. To insert an audio file, follow the given steps:

   Step 1: Click on the Insert tab.

   Step 2: Click on the Audio command.

   Step 3: Choose the desired option.

   Step 4: Select the file.

   Step 5: Click on the Insert button.

   Step 6: Click on Play/Pause button to play or pause the audio.

4. An action button can be used to move from one slide to another and play media files.
5. Four views in PowerPoint are:

   a. Normal View

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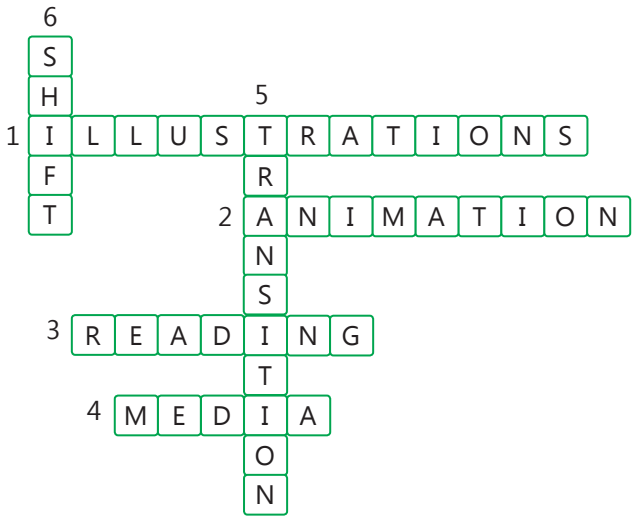
b. Slide Sorter View

c. Notes Page View

d. Reading View

FUN ZONE



Competency-based/Application-based questions

1. He can add Action buttons to do so.

2. She can apply Animation to do so.

5. Algorithm and Pseudocode

LET'S RECAP (Page no. 66)

1	12	5	18	20	27	13	1	10	15	18	27	3	25	3	12	15	14	5
A	L	E	R	T		M	A	J	O	R		C	Y	C	L	O	N	E

QUEST (Page no. 68)

Step 1: Start

Step 2: Take triangle's height and base

Step 3: Calculate, area of triangle = 1/2(Base x Height)

Step 4: Print area of triangle

Step 5: Stop

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EXERCISE

A. 1. (ii) 2. (iv)

B. 1. Algorithm 2. Sequence 3. Syntax 4. language

C. 1. Java, Python

2. Step 1: Take out two slices of bread and place them on a plate

   Step 2: Choose your desired filling (such as cheese, onion, cucumber or tomato) and place it on one of the slices of bread.

   Step 3: Put the two slices of bread together, with the filling and condiments facing each other.

   Step 4: Cut the sandwich in half (optional).

   Step 5: Serve and enjoy your sandwich!

   Step 6: If using condiments (such as mayonnaise, mustard, or ketchup), spread them on the other slice of bread.

3. Program start

   Read given number (n)

   Read any integer between 2 to n-1 (i)

   If (n <= 1)

   Print ('Not a prime number')

   Else If (n % i == 0)

   Print ('Not a prime number')

   Else

   Print ('It is a prime number')

   Program End

FUN ZONE

Step 3: web browser.

Step 4: www.google

Step 5: "Who developed first code?"

Step 6: Enter key

Competency-based/Application-based questions

1. Repeat Until
2. If-Then-Else

Periodic Assessment 2

(Based on chapters 4 & 5)

A. 1. Insert tab 2. Animations tab 3. Transitions tab
4. Slide Show tab 5. View tab

B. Step 1: Start
Step 2: Take rectangle's length and breadth
Step 3: Calculate, perimeter of rectangle = 2 x (Length x Breadth)
Step 4: Print perimeter of rectangle
Step 5: Stop

C. Program Start
Read percentage obtained by the student (a)
If (a <= 40%)
Print('Exam is not cleared')
Else
Print('Exam is cleared')
Program End

Test Sheet 1

(Based on chapters 1 to 5)

A. 1. (ii) 2. (iii) 3. (iv) 4. (iv) 5. (i) 6. (iii) 7. (ii) 8. (ii)

B. 1. column 2. Slide 3. Text 4. Algorithm 5. Dollar ($)
6. Scatter charts 7. Plot area 8. object

C. 1. F 2. F 3. T 4. T

D. 1. (b) 2. (c) 3. (d) 4. (a)

E. 1. Ways to protect our computer:
   i. Download only legal software
   ii. Use the original version of Windows
   iii. Scan Pen drive, CD and any other external storage device for viruses before opening in computer
2. To create a chart, follow the given steps:
   Step 1: Select the range of cells.
   Step 2: Click on the Insert tab.

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Step 3: Click on the Insert Column or Bar Chart command.

Step 4: Select the 2-D Column Chart option.

3. An action button can be used to move from one slide to another and play media files.
4. Java, Python
5. a. Trojan Horse: A trojan horse is a dangerous virus. It represents itself as helpful software program. Once the user clicks on it to agree to run it, it gains access to sensitive data and then modifies, blocks, or deletes the data.

   b. Adware: An adware tracks user's browser and download history and keeps popping advertisements on the screen.
6. Program start

   Read given number (n)

   Read any integer between 2 to n-1 (i)

```
If (n <= 1)
    Print ('Not a prime number')
Else If (n % i == 0)
    Print ('Not a prime number')
Else
    Print ('It is a prime number')
```

   Program End
7. To insert an audio file, follow the given steps:

   Step 1: Click on the Insert tab.

   Step 2: Click on the Audio command.

   Step 3: Choose the desired option.

   Step 4: Select the file.

   Step 5: Click on the Insert button.

   Step 6: Click on Play/Pause button to play or pause the audio.

6. Using MakeCode Arcade

LET'S RECAP (Page no. 76)

Step 1: Start

Step 2: Take first alphabet of the name of the book

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Step 3: Go to the that alphabetical section of the library

Step 4: Search the book in that section and take it out

Step 5: Stop

QUEST (Page no. 90)

1. OR operator 2. NOT operator 3. Continue statement 4. Break statement

EXERCISE

A. 1. (i) 2. (i) 3. (iv)

B. 1. Logical 2. continue 3. true 4. nesting

C. 1. AND operator is used to check if two or more conditions are TRUE or Yes whereas NOT operator is used to reverse or negate a condition.

2. • Equal to (==) operator is used to check whether two values are equal.
   • Less than (<) operator is used to check whether left operand is less than right operand or not.

3. To use built-in sprites from the gallery, follow the given steps:

   Step 1: Select Gallery after clicking on the image icon.

   Step 2: Select desired sprite to add it to your workspace.

   Step 3: Click on Done button.

FUN ZONE

1. Pencil 2. Eraser 3. Rectangle 4. Fill 5. Circle 6. Line

Competency-based/Application-based questions

1. By creating a sprite using the image editor.
2. NOT operator

7. More on MakeCode Arcade

LET'S RECAP (Page no. 93)

1. Sprites blocks 2. Controller blocks 3. Game blocks 4. Music blocks

5. Scene blocks

QUEST (Page no. 104)

1. T 2. F 3. T 4. T 5. T 6. T 7. T 8. F

EXERCISE

A. 1. (ii) 2. (iii) 3. (iv) 4. (iii) 5. (iii)

B. 1. undefined 2. data 3. bug 4. exit 5. Event handler

C. 1. T 2. F 3. T 4. T 5. F

D. 1. `Datatype VariableName=Value;`

2. The for loop is used to repeat a sequence a specific number of times whereas while loop executes a statement or group of statements till a given condition is true, once the condition is false, the loop is terminated.

3. Benefits of using Sequences in coding:
   - Our manner of thinking can be easily replicated in sequence programming.
   - Sequence of programming reflects logical thinking.

4. - Event is an action which has happened. You can consider event as a generalization of things on which the program responds.
   - Event handler is a block of code which get executed when the event occurs and it is associated with the event.

5. Example of collection:
   - Collection of cards
   - Telephone directory

FUN ZONE

A. Step 1: Wake up
Step 2: Brush your teeth
Step 3: Take a bath
Step 4: Have breakfast
Step 5: Go to school

B. 1. Program Start
set b to 0
while b is equal to 1
display the value of b
decrease the value of b by 1
Program End

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2. Program Start
   list = [10, 20, 30, 40, 50]
   for a in list
       if a % 2 != 0
       print(a, end = ' ')
   Program End

3. Program Start
   set b to 0
   while b is equal to 1
       display the value of b
       decrease the value of b by 1
   Program End

4. Program Start
   set a to 0
   while a is more than 5
       decrease the value of a by 1
       display Hello World
   Program End

Competency-based/Application-based questions

1. By using loops
2. (i) float

8. Types of Robots

LET'S RECAP (Page no. 109)

1. Zenbo: It is a low-cost robot capable of rolling around freely.
2. Z-Machines: It is a music-band.

QUEST (Page no. 117)

A. 1. Kitchen Robots and Ironing Robots

2. A-PUFFER and The BRUIE

3. Furby and Aibo

B. Robots are changing agriculture beyond recognition, from cobot-assisted milking to cow-herding drones, they are there to help in every steps of farming.

EXERCISE

A. 1. (iii) 2. (ii) 3. (iv) 4. (i) 5. (ii)

B. 1. Marimba-playing 2. Service 3. Furby 4. Humanoid 5. Robots

C. 1. T 2. F 3. F 4. F 5. T

D. 1. Industrial robots, Collaborative robots and Service robots.

2. A collaborative robot, or Cobot, is a type of robot intended to physically interact with humans in a shared workspace. These robots are supposed to work along with the humans and provide safety and flexibility.

3. Industrial robot are:
   - used for manufacturing purposes.
   - automated.
   - capable of movement in three or more axes.

4. Robots either allow surgical operations to be carried out with better precision than an unaided human surgeon or allow remote surgery where a human surgeon is not physically present with the patient. Robots are very useful in situations where a certain area need to be decontaminated or sterilised.

5. Some of the reasons for using Robots in space and research are as follows:
   - They are sent to space because sending a robot in space is much cheaper than sending a human.
   - They don't need to sleep. Hence, they can work for long hours.
   - They don't need to eat. Hence, they can survive in space for many years and can be left out there for further research.
   - They can withstand harsh conditions, like extreme temperatures or high levels of radiation.

FUN ZONE

C	S	H	I	M	O	N	F	E	A
C	U	R	I	O	S	I	T	Y	I
X	B	S	V	F	H	Y	H	B	B
J	L	S	S	A	F	F	I	R	O
Y	E	J	N	V	L	Z	A	U	D
U	G	S	C	J	J	D	S	I	Z
D	O	T	W	U	R	I	S	E	S
J	S	D	Y	Z	N	I	N	U	L
N	U	F	P	S	W	X	V	A	Q
L	K	F	U	R	B	Y	L	P	Y

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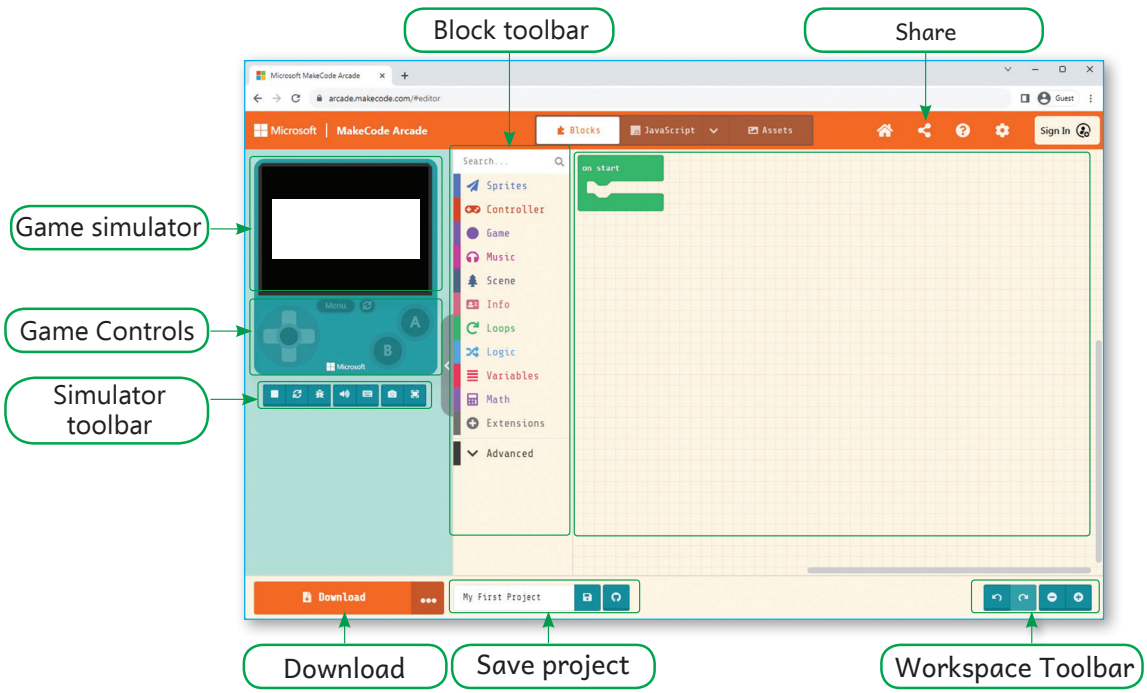
Competency-based/Application-based questions

1. Service robots
2. The BRUIE

Periodic Assessment 3

(Based on chapters 6 to 8)

A.



B. 1. A variable is a name given to a location in the memory, to store values or data.

2. An operand is a value on which the operator performed operation.
3. A sequence in programming is an ordered set of instructions or tasks.
4. A loop is a construct which executes a block of code multiple times until a specific condition is met.

C. 1. Rotimatic 2. Knightscope 3. Aibo 4. Humanoid

IMPRINT 1

9. Exploring Maths with Coding

LET'S RECAP (Page no. 123)

1. 9 2. 13 3. 6 4. 4

QUEST (Page no. 125)

1. (c) 2. (d) 3. (b) 4. (e) 5. (a)

EXERCISE

A. 1. (iv) 2. (ii) 3. (i) 4. (iv)

B. 1. Mathematical 2. Variables 3. Conversion 4. Basic Coding

C. 1. T 2. F 3. T 4. F

D. 1. Let, L = Length of the rectangular farm

W = Width of the rectangular farm

Then, Perimeter of rectangular farm, P = 2(L+W)

As we know, total length of fencing = Perimeter of a farm = 2(L+W)

Suppose, the cost of fence per meter = Rs. Z

Then, the total cost of fencing = Z × P

= Z × 2(L + W)

2. To create a program in AI Connect to calculate the multiplication of two numbers, create a project in it. In this project, create a Basic Coding activity. Then, follow the given steps:

Step 1: Go to the Variables category and click on the Create variable... block.

Create three variables named a, b (to take input from the user) and c (for the output).

Step 2: Drag set ... to block from Variables category. Click on the arrow in it, to select a. Attach int block from Conversion category inside this block. Then, drag the input prompt block from the Input category and fix it inside the int block.

Step 3: Perform the step 2 for variable b also.

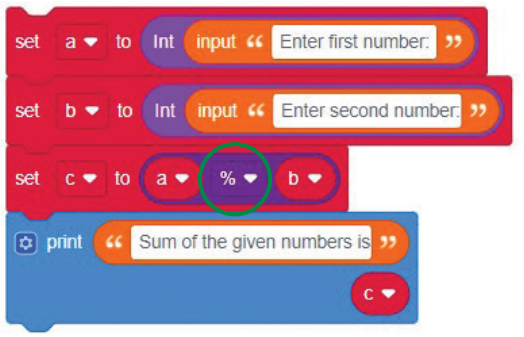
Step 4: Attach set ... to block from Variables category. Click on the arrow in it, to select c. Attach the multiplication block from the Math category. Attach a and b variable blocks from the Variables category inside the multiplication block.

Step 5: Attach print block from the Output category. Click on setting icon on it and add one more item to it. Attach input block and c variable block inside it.

Step 6: Click on Run button. Enter any value of variable a and variable b in the given boxes and click on Enter button. The result will be displayed as shown in the image.

FUN ZONE

1.



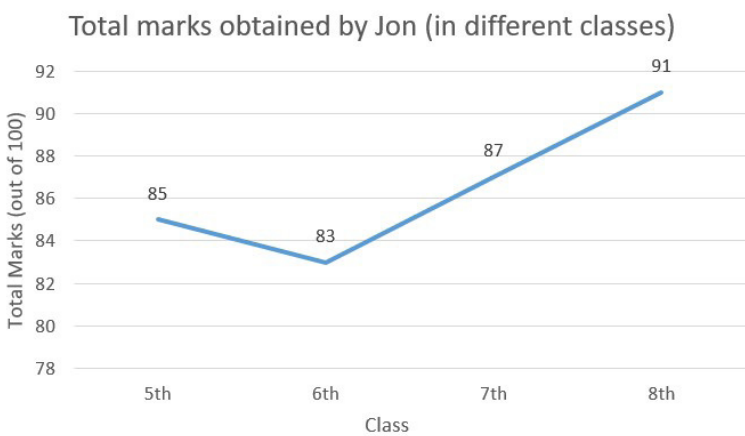
2. In the given code, click on the arrow of the Math block and select addition symbol (+) from it.

Competency-based/Application-based questions

1. Multiplication block
2. Let, R = Radius of the farm
   Total length of fencing = Perimeter of a farm = 2 π R

10. Plotting Graphs

LET'S RECAP (Page no. 129)



QUEST (Page no. 131)

1. (c) 2. (a) 3. (d) 4. (b)

EXERCISE

A. 1. (i) 2. (iv) 3. (i) 4. (iii)

B. 1. Graph 2. Graph Plot 3. Render Chart 4. List

C. 1. F 2. T 3. T 4. F

D. 1. The purpose of a graph is to present information that is too complicated in a simplified visual manner.

2. Matplot sub-category and Pygal sub-category

3. To draw a Vertical bar graph in AI Connect, create a project, in it create Basic Coding activity. Then, follow the given steps:

Step 1: Drag and drop Bar Chart block from the Pygal sub-category.

Step 2: Attach Title block and type the title of the graph in it.

Step 3: Attach add label block and add all the data and their labels using '+' button on it.

Step 4: Attach Render Chart block in the end to show the graph on the stage area. And click on Run button.

FUN ZONE

1. Bar Chart block 2. Pie Chart block 3. Variables category 4. Render Chart block

Competency-based/Application-based questions

1. By clicking on "+" in the create list of block and adding the number value in the available spaces.
2. Matplot sub-category under Graph Plot category

11. AI in Real World

LET'S RECAP (Page no. 135)

1. True 2. False

QUEST (Page no. 138)

1. Artificial Intelligence
2. Face mask detection robots
3. Load Image block
4. Logic category

EXERCISE

IMPRINT 1

A. 1. (ii) 2. (iv) 3. (i) 4. (iii)

B. 1. Artificial Intelligence 2. nose 3. setting

C. 1. T 2. T 3. F

D. 1. Load Image block is used to load an image from your computer or click it using a webcam.

2. The main aim of AI (Artificial Intelligence) is to improve a computer's functions that are related to human knowledge, for example, reasoning, learning and problem solving.

3. The if-do block is used as the conditional block. If, if condition is satisfied it gives the output as mentioned in the do part, otherwise it gives the output mentioned in else part.

FUN ZONE

1. AI Learning category 2. Logic category 3. Input category

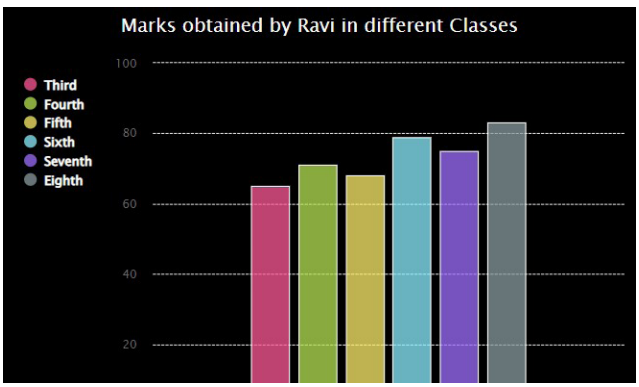
Competency-based/Application-based questions

1. Show Image with border block
2. Browse button

Periodic Assessment 4

(Based on chapters 9 to 11)

A.



B. 1. Horizontal Bar Chart block is used to plot a horizontal bar chart.

2. Render Chart block is used to show chart on the output screen.

3. Pie Chart block is used to plot a Pie chart (circular graph).

C. Total cost of fencing is 9000

Test Sheet 2

(Based on chapters 6 to 11)

Section A

A. 1. (i) 2. (ii) 3. (iv) 4. (i) 5. (ii) 6. (iii) 7. (i) 8. (i) 9. (iii) 10. (iii)

B. 1. continue 2. undefined 3. Furby 4. setting 5. Graph Plot
6. Render Chart 7. Basic Coding

C. 1. F 2. F 3. F 4. T 5. T 6. F 7. T

D. 1. Robots either allow surgical operations to be carried out with better precision than an unaided human surgeon or allow remote surgery where a human surgeon is not physically present with the patient. Robots are very useful in situations where a certain area need to be decontaminated or sterilised.

2. Benefits of using Sequences in coding:
   - Our manner of thinking can be easily replicated in sequence programming.
   - Sequence of programming reflects logical thinking.

3. To use built-in sprites from the gallery, follow the given steps:

   Step 1: Select Gallery after clicking on the image icon.

   Step 2: Select desired sprite to add it to your workspace.

   Step 3: Click on Done button.

4. Let, L = Length of the rectangular farm

   W = Width of the rectangular farm

   Then, Perimeter of rectangular farm, P = 2(L+W)

   As we know, total length of fencing = Perimeter of a farm = 2(L+W)

   Suppose, the cost of fence per meter = Rs. Z

   Then, the total cost of fencing = Z × P

   = Z × 2(L + W)

5. The if-do block is used as the conditional block. If, if condition is satisfied it gives the output as mentioned in the do part, otherwise it gives the output mentioned in else part.

6. The purpose of a graph is to present information that is too complicated in a simplified visual manner.

7. Load Image block is used to load an image from your computer or click it using a webcam.

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