Class 8

Answer Key

CodePilot (V 5.0)

1. Networks Around Us

A.

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

B.

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

C.

1. Gateway	2. SMTP	3. Star	4. Guided	5. CAN

D.

1. Network topology describes the physical or logical layout of the network, that is, how all the components (such as computers, cables and switches) are interconnected to each other.
2. HTTP is used to ensure the smooth transfer of web pages between a server and browser. On the other hand, HTTPS encrypts the communication between the browser and the server.
3. In a Client/Server network, clients access resources from a central server. The server is responsible for managing all the resources such as files, directories, printers, etc.
4. Network bandwidth means the amount of data that can be transmitted across a network in a given time, usually measured per second.
5. A transmission medium is the path or channel through which data travels from one device to another in a network. It is essential for determining the speed, quality, and reliability of the data transfer.

COMPETENCY-BASED QUESTIONS

1. (a) In a wired network, a switch or hub should be used to link several computers together. A switch is preferred over a hub as it is more efficient in managing data transmission.

   (b) The most appropriate topology for this type of configuration would be star topology.
2. Gateway

LAB LEARNING

Do it yourself.

CODE CHECK

Do it yourself.

2. Smart Learning with Google Apps

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

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

C. 1. Collaboration 2. My Drive 3. Google Docs 4. Google Forms 5. Google Earth

D. 1. Google Drive is a cloud storage service that allows you to store, share and collaborate on files.

2. The steps to create a new spreadsheet by using the Google Sheets are as follows:
   1. Click on the **Google apps** button.
   2. Click on the **Sheets** icon.
   3. Click on the **Blank spreadsheet** template. The new spreadsheet is created.

3. The steps to download a file from Google Docs are as follows:
   1. Click on the **File** menu.
   2. Click on the **Download** option from the drop-down menu.
   3. Select the desired format from the submenu. The file will be downloaded in the selected format.

4. Some important features of Google Lens includes object and text recognition, QR code and barcode scanning, landmark identification with historical details and real-time search based on live camera input.

5. (a) Google Calendar is an application that helps users schedule and set reminders for events and appointments.

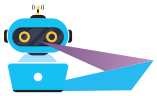
   (b) Google Meet is a video conferencing app that enables online meetings and classes.

COMPETENCY-BASED QUESTIONS

1. Srishti should use Google Classroom because it allows teachers to allows teachers to share class announcements, create and distribute assignments, tests & questions and evaluate student work while providing feedback.
2. Ishaan should use **Google Calendar** because it helps in planning events, sending invitations, and managing schedules to ensure everything runs smoothly.

LAB LEARNING

Do it yourself.



CODE CHECK

Do it yourself.

Periodic Assessment–1

(Based on chapters 1 & 2)

A. 1. Twisted Pair Cable 2. Coaxial Cable 3. Fibre Optic Cable

B. 1. c 2. e 3. a
4. b 5. d

C. 1. Uniform Resource Locator 2. Internet Service Provider 3. Network Bandwidth

3. Stills to Motion with Canva

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

B. 1. Video Editing 2. Trimming 3. Animation 4. Share 5. Timeline

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

D. 1. Video editing is the process of refining video clips by removing unnecessary parts and adding sound, text, effects and transitions.

2. Timeline shows a chronological order of video clips, audio tracks and transitions. The timeline allows trimming, reorganising or adjusting the duration of clips and elements.

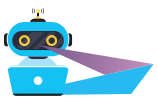
3. Trimming allows you to shorten a video clip by removing unnecessary parts from the beginning or end.
4. To add sound effects or music to our video, perform the given steps:
   1. Click on the **Add Audio** button present in the timeline.
   2. Click on the **See all** link on the Audio section.
   3. Click on the desired audio file.
   4. Click on the **Fade** option.
   5. Drag the sliders of the **Fade In** and **Fade out** to make the audio clip start and end softly.
5. To share a video, perform the given steps:
   1. Click on the **Share** button.
   2. Click the drop-down menu under the **Access level** section to set the access permissions.
   3. Select the desired option from the **Can view**, **Can comment** and **Can edit** options.
   4. Click the **Copy link** button to finalise sharing. Now, send the link with person whom you want to share the video.

COMPETENCY-BASED QUESTIONS

1. Aman can add background music to his motivational video in Canva by uploading his own music by using the uploads button in the Object Panel.
2. Rahul can use the Animate tool to add animation effects to text and images and the Transitions tool to create smooth changes between video clips.

LAB LEARNING

Do it yourself.



CODE CHECK

Do it yourself.

4. AI, Ethics and Online Awareness

A.	1. (ii)	2. (iii)	3. (i)	4. (ii)	5. (i)
B.	1. Create	2. Black-hat	3. Digital Citizen	4. Big Data	5.Fakenews
C.	1. T	2. T	3. F	4. T	5. T

D.

1. Digital citizenship is the responsible and ethical use of technology, the Internet and online platforms.
2. Big data collection raises concerns about privacy and data security. A good digital citizen is aware of what data they share and actively manages their privacy settings.
3. Misinformation is false information shared without knowing it's wrong, while disinformation is false information created deliberately created false information meant to mislead, provoke fear, anger or influence beliefs.
4. Two core values of digital citizenship are as follows:
   - **Respect:** Treat others kindly and respectfully online, just as in person. Avoid bullying, harassment, or hurtful behaviour.
   - **Responsibility:** Use technology and digital resources wisely and ethically. Take ownership of actions and their impact on others.
5. Hacking is when someone tries to access a computer, network or online account by bypassing security measures.

COMPETENCY-BASED QUESTIONS

1. This is a case of black-hat hacking.
2. Meena can check the source to ensure it is trustworthy and verify the facts by confirming the news on other reliable sources before sharing.

LAB LEARNING

Do it yourself.

CODE CHECK

Do it yourself.

5. Abstraction: The Art of Simplifying

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

B. 1. T 2. F 3. T 4. T

C. 1. Problem segmentation 2. Internal 3. Logic Masking
4. Complexity

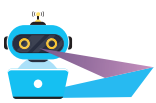
D.
1. Problem Segmentation is the process of dividing a big task into smaller, manageable parts. This helps in focusing on one step at a time and completing tasks efficiently.
2. Logic masking means showing only the information that is needed and hiding anything unnecessary to keep the display clean and secure. It helps in protecting sensitive data from unauthorised access.
3. Encapsulation means grouping related information and design together so it works as a single, self-contained unit. It hides the internal details and shows only the required features to the user.

COMPETENCY-BASED QUESTIONS

1. The concept of logic masking is applied in this situation.
2. The concept of problem segmentation is applied in this situation.

LAB LEARNING

Do it yourself.

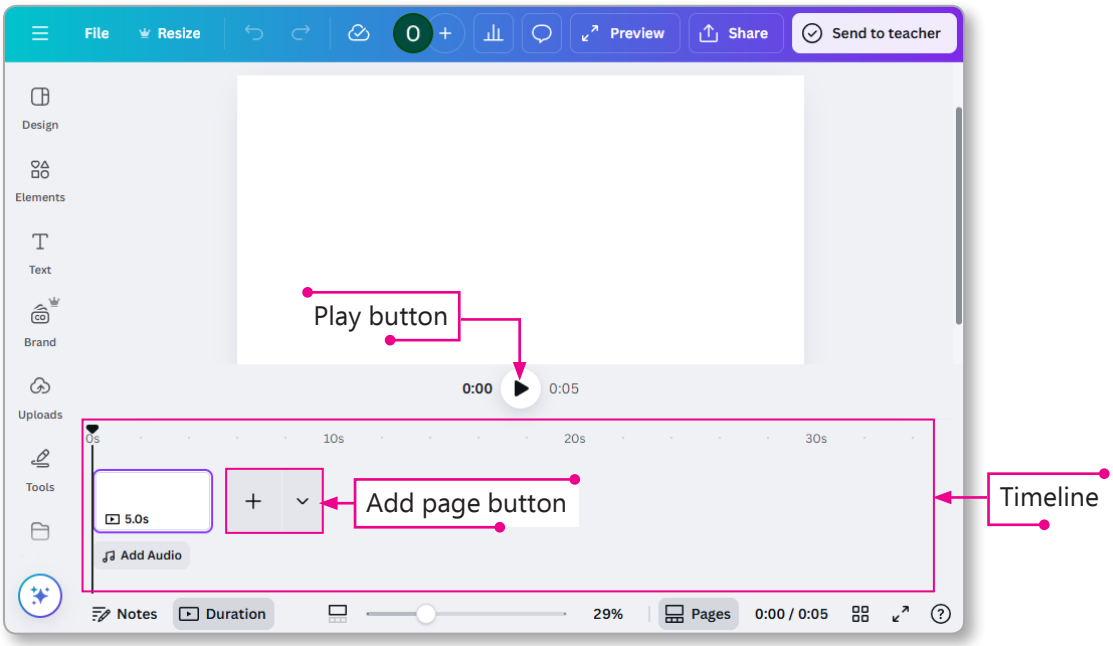


Do it yourself.

Periodic Assessment–2

(Based on chapters 3 to 5)

A.



B. 1. d 2. c 3. a 4. e 5. b

C. 1. Problem Segmentation 2. Encapsulation
3. Logic Masking 4. Abstraction

Test Sheet–1

(Based on chapters 1 to 5)

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

B. 1. F 2. T 3. F 4. T 5. F
6. T

C. 1. Start 2. Google Earth 3. Animation 4. Create
5. Internal 6. Problem Segmentation

D. 1. In a Client/Server network, clients access resources from a central server. The server is responsible for managing all the resources such as files, directories, printers, etc.

2. The steps to create a new spreadsheet by using the Google Sheets are as follows:

   1 Click on the **Google apps** button.

2. Click on the **Sheets** icon.
3. Click on the **Blank spreadsheet** template. The new spreadsheet is created.

3. Timeline shows a chronological order of video clips, audio tracks, and transitions. You can trim, reorganise or adjust the duration of clips and elements.
4. Big data collection raises concerns about privacy and data security. A good digital citizen is aware of what data they share and actively manages their privacy settings.
5. Logic Masking means showing only the information that is needed and hiding anything unnecessary to keep the display clean and secure. It helps in protecting sensitive data from unauthorized access.
6. Trimming allows you to shorten a video clip by removing unnecessary parts from the beginning or end.

6. Frames and Forms in HTML5

A.	1. (ii)	2. (ii)	3. (iii)	4. (ii)	5. (iii)
B.	1. <IFRAME>	2. BORDER	3. METHOD	4. ENCTYPE	5. ID
C.	1. T	2. F	3. T	4. T	5. T

D. 1. A frame is used to display nested web pages. In other words, a frame embeds another document within the current HTML document in a rectangular region.

2. The importance of the VALUE, NAME and CHECKED attributes in the <INPUT> tag is:
   - **VALUE:** It specifies the value of the <INPUT> tag.
   - **NAME:** It specifies the name of the <INPUT> tag.
   - **CHECKED:** It specifies that an element should be pre-selected.
3. (a) Radio Button lets the user select exactly one option from a predefined set of options with the same name value. Grouping is achieved through a common NAME attribute.

   (b) A checkbox is like a toggle switch, allowing users to select multiple options by clicking on them. The checkbox can be selected by default using the CHECKED attribute.
4. The <TEXTAREA> tag is used to create a multi-line text box that can accept lengthy text values. The syntax to add the text area in the form is as follows:

```
<TEXTAREA ROWS="NUMBER_OF_ROWS" COLS="NUMBER_OF_COLUMNS"
NAME="TEXTAREA_ NAME" PLACEHOLDER= "The hint for the user">  </
TEXTAREA>
```

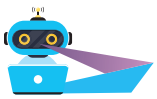
5. Three CSS properties that can be applied to style HTML forms are:
   - **PADDING:** It adds space inside a form element, between its content and its border.
   - **MARGIN:** It adds space outside a form element, separating it from surrounding form elements. The AUTO value is commonly used to centre elements horizontally.
   - **BORDER:** It adds a border around an element with width, style and colour.

COMPETENCY-BASED QUESTIONS

1. Myra can use the MARGIN property to centre the submit button horizontally by setting the left and right margins to auto.
2. Arjun can use the <DATALIST> tag to create a drop-down list that allows both selection and custom input.

LAB LEARNING

Do it yourself.



CODE CHECK

Do it yourself.

7. JavaScript for Beginners

A.

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

B.

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

C.

1. Internal JavaScript	2. Comments	3. Variable	4. Confirm
5. Web Browser			

D.

1. A block of code created specifically to carry out a specific task is referred to as a JavaScript function.
2. JavaScript popup boxes are used to interact with users by displaying messages or requesting input. There are three main types of popup boxes: Alert Box, Confirm Box, and Prompt Box.
3. An expression is a meaningful combination of variables, values and operators which can be evaluated and simplified to a single result.

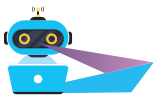
4. Comments are instructions that are not executed by the interpreter. JavaScript code may also include comments for the purpose of documentation and readability.
5. Internal JavaScript is written directly within an HTML page using <SCRIPT> tags, and it can be placed inside the <HEAD> or <BODY> sections of the document. While, External JavaScript is written in a separate .js file, which is then linked to the HTML page using the SRC attribute of the <SCRIPT> tag, usually within the <HEAD> section.

COMPETENCY-BASED QUESTIONS

1. Logical AND (&&) operator.
2. The prompt() popup.

LAB LEARNING

Do it yourself.



Do it yourself.

8. MySQL: My First Database

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

B. 1. DESC 2. Constraints 3. SELECT 4. SHOW DATABASES 5. Database

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

D. 1. The SELECT command retrieves zero or more rows from a table. It used to join information from different tables and filter specific information as per the required criteria.

2. SQL operators are used to perform operations on values in a SQL query. They allow you to access, compare, and modify data in various ways.

3. The UNIQUE constraint ensures that each value in a column is unique.

   The CHECK constraint restricts the range of value that can be stored in a column by enforcing a specified condition.

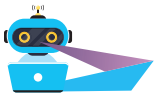
4. Primary key is a field which is used to uniquely identify records in a database. It is a unique field and it cannot be left blank. While, a foreign key is a field in one table that refers to the primary key in another table. It helps to establish a relationship between two tables.
5. The WHERE clause is used to filters records based on specified conditions.

COMPETENCY-BASED QUESTIONS

1. Primary key.
2. The WHERE clause.

LAB LEARNING

Do it yourself.



CODE CHECK

Do it yourself.

Periodic Assessment–3

(Based on chapters 6 to 8)

A.
1. <IFRAME SRC="URL" NAME="DESCRIPTION">.....</IFRAME>
2. <LABEL FOR= "ID OF INPUT ELEMENT"> Label Text</LABEL>
3. <INPUT TYPE="RADIO" NAME="Name of the radio group" VALUE="value of radio button" CHECKED>

B.

1. Modulus	2. And	3. Exponent	4. Or
5. Increment	6. Not	7. Decrement	8. Not equal

C.

1. INTEGER	2. BOOLEAN	3. VARCHAR	4. Date

D.
1. CREATE DATABASE database_name;
2. UPDATE table_name SET Column = value WHERE condition;
3. DESCRIBE table_name; or DESC table_name;
4. INSERT INTO table_name VALUES (value1, value2, value3, ...);
5. SELECT * FROM table_name;

9. Step Ahead with Python

LEARNING LOGS

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

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

C. 1. def 2. User-defined 3. Positive 4. List
5. randint()

D.
1. A group of characters enclosed in single or double or triple quotes is called a string.
2. Four built-in list functions in Python are: append(), insert(), sort() and reverse().
3. A list in Python can be defined as an ordered collection of items that can store multiple values in a single variable. In a list, each element or value is called an item. A list is mutable, which means the items in a list can be modified by assigning new values.
4. Built-in functions are predefined in Python and can be used directly without any further declaration. While, user-defined functions are those that are created by the user according to the needs of the program.
5. In Python, a library is a set of interconnected modules. A module is a Python file containing functions, classes and variables that can be reused across multiple programs, making code modular and easier to manage.

COMPETENCY-BASED QUESTIONS

1. Karthik can use the capitalize() function in Python.
2. Simran can use the + (concatenation) operator along with spaces to join the strings.

LAB LEARNING

Do it yourself.

CODE CHECK

Do it yourself.

10. Data Science

LEARNING LOGS

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

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

C. 1. Data Science 2. Data 3. Forms, Surveys 4. Data Visualisation
5. Artificial Intelligence

D. 1. Data Science is a field that involves extracting meaningful insights and information from the large amount of raw data.

2. Two applications of Data Science are:
   - **Business:** For improving customer experience, predicting the sales trends and optimising supply chains.
   - **Healthcare:** To predict the disease outbreaks, recommend treatments,and improve patient care.

3. Structured data is highly organised and formatted to be easily searchable, typically in databases using rows and columns (e.g., SQL databases). While, unstructured data lacks a predefined format or structure, making it more difficult to search and analyse.

4. Tableau is an ideal data visualisation software that helps in analysing data which allows users to create interactive visualisations and dashboards.

5. Artificial Intelligence and Data Science are closely connected, as
   - Data Science provides the machine with the data it needs to learn.
   - Artificial Intelligence uses that data to learn, make predictions and perform smart tasks.

COMPETENCY-BASED QUESTIONS

1. The app uses data visualization tools to create reports.
2. Rohit can use Google Forms to create and gather responses efficiently.

LAB LEARNING

Do it yourself.

CODE CHECK

Do it yourself.

11. VEXcode VR: Drive, Sense and Create

LEARNING LOGS

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

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

C. 1. Gyro 2. down 3. Down Eye 4. Set drive velocity
5. Turn for

D. 1. Drawing blocks in VEXcode VR allow drawing paths on the playground by controlling the robot's movement.

2. The wait until block pauses everything until the condition becomes true, then resumes execution.

3. Virtual robots are computer-simulated robots that you can program and control on your computer screen. They use artificial intelligence and programming to carry out tasks, learn, and solve problems but everything happens in a digital or simulated environment.

4. Distance sensing blocks use the distance sensor to measure the space between the robot and obstacles.

5. The description of two Drivetrain blocks in VEXcode VR are as follows:

Block	Description
drive block	Moves the drivetrain in a chosen direction (forward or reverse) indefinitely.
drive for block	Moves the drivetrain in a chosen direction for a specific distance.

COMPETENCY-BASED QUESTIONS

1. Use the Down Eye Sensor to detect the black line.
2. Use the Eye Sensor brightness in % block.

LAB LEARNING

Do it yourself.

CODE CHECK

Do it yourself.

Periodic Assessment–4

(Based on chapters 9 to 11)

A. 1. Structured Data 2. Unstructured Data

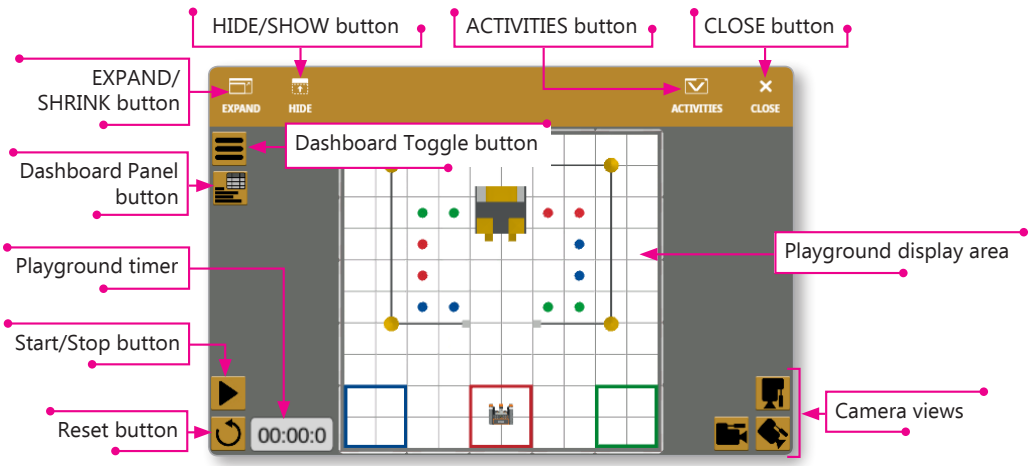
3. Semi-structured Data

B. 1. **Business:** To improve customer experience, predict sales trends and optimise supply chains.

2. **Healthcare:** To predict disease outbreaks, recommend treatments and improve patient care.

3. **Entertainment:** Over-the-Top (OTT) or Streaming platforms like Netflix and YouTube use Data Science to recommend movies and videos to users based on their watching history.

C.



Test Sheet–2

(Based on chapters 6 to 11)

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

6. (i) 7. (ii) 8. (iii)

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

6. F 7. F 8. T

C. 1. Method 2. Web browser 3. Select 4. List

5. Forms, Surveys 6. Artificial Intelligence 7. Down 8. Turn for

D. 1. The importance of the VALUE, NAME and CHECKED attributes in the <INPUT> tag is:

- **VALUE:** It specifies the value of the <INPUT> tag.
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- **CHECKED:** It specifies that an element should be pre-selected.

2. JavaScript popup boxes are used to interact with users by displaying messages or requesting input. There are three main types of popup boxes: Alert Box, Confirm Box and Prompt Box.
3. Primary key is a field which is used to uniquely identify records in a database. It is a unique field and it cannot be left blank. While, a foreign key is a field in one table that refers to the primary key in another table. It helps to establish a relationship between two tables.
4. Four built-in list functions in Python are: append(), insert(), sort() and reverse().
5. Data Science is a field that involves extracting meaningful insights and information from the large amount of raw data.
6. Tableau is an ideal data visualisation software that helps in analysing data which allows users to create interactive visualisations and dashboards.
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