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Computer Science Grade 9 — Chapter 1

Computer Systems

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Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. Which technology was the core component of first-generation computers?

(A) Vacuum tubes
(B) Transistors
(C) Integrated Circuits
(D) Microprocessors

Correct Answer: A

Explanation: First-generation computers (1940–1956) relied on vacuum tubes as their core technology.

2. What is the smallest unit of memory in a computer?

(A) Byte
(B) Bit
(C) Kilobyte
(D) Megabyte

Correct Answer: B

Explanation: A bit (0 or 1) is the smallest unit of memory.

3. What does HTML stand for?

(A) High-Level Machine Language
(B) Hyperlink Text Management Language
(C) Hypertext Markup Language
(D) Home Tool Markup Language

Correct Answer: C

Explanation: HTML stands for Hypertext Markup Language.

4. Which device broadcasts data to all connected devices in a network?

(A) Switch
(B) Router
(C) Gateway
(D) Hub

Correct Answer: D

Explanation: Hub — this correctly answers the question.

5. Which type of memory loses its data when the computer is turned off?

(A) RAM
(B) ROM
(C) Hard Disk
(D) Flash Memory

Correct Answer: A

Explanation: RAM is volatile memory; data is lost when power is off.

6. What is the primary function of the Arithmetic Logic Unit (ALU)?

(A) Managing system activities
(B) Performing mathematical and logical operations
(C) Storing data temporarily
(D) Controlling input/output devices

Correct Answer: B

Explanation: Performing mathematical and logical operations — this correctly answers the question.

7. Which of the following is an example of system software?

(A) Microsoft Word
(B) Minecraft
(C) Microsoft Windows
(D) Spotify

Correct Answer: C

Explanation: Microsoft Windows is an operating system (system software).

8. In which network topology are all devices connected to a single central cable?

(A) Star Topology
(B) Ring Topology
(C) Mesh Topology
(D) Bus Topology

Correct Answer: D

Explanation: Bus topology uses a single central cable for all devices.

9. Which generation of computers introduced microprocessors?

(A) Fourth Generation
(B) First Generation
(C) Second Generation
(D) Third Generation

Correct Answer: A

Explanation: Fourth Generation — this correctly answers the question.

10. What is the function of the Control Unit (CU)?

(A) Performs arithmetic operations
(B) Manages and directs system activities
(C) Stores data permanently
(D) Displays output on screen

Correct Answer: B

Explanation: Manages and directs system activities — this correctly answers the question.

11. Which of the following is an example of an input device?

(A) Monitor
(B) Printer
(C) Keyboard
(D) Speaker

Correct Answer: C

Explanation: Keyboard — this correctly answers the question.

12. Which storage device uses laser technology to read and write data?

(A) Hard Disk
(B) SSD
(C) USB Flash Drive
(D) CD

Correct Answer: D

Explanation: CD — this correctly answers the question.

13. What is a protocol in data communication?

(A) A set of rules that governs data communications
(B) A hardware device
(C) A type of cable
(D) A network topology

Correct Answer: A

Explanation: A protocol is a set of rules governing data communications.

14. Which of the following is a high-level programming language?

(A) Machine Language
(B) Python
(C) Assembly Language
(D) Binary Code

Correct Answer: B

Explanation: Python is a high-level programming language.

15. Which network type covers a city-wide area of 5–50 km?

(A) LAN
(B) WAN
(C) MAN
(D) PAN

Correct Answer: C

Explanation: MAN — this correctly answers the question.

16. Which of the following best describes why transistors replaced vacuum tubes?

(A) They were cheaper to manufacture
(B) They used less electricity
(C) They were easier to program
(D) They were smaller, faster, and more reliable

Correct Answer: D

Explanation: They were smaller, faster, and more reliable — this correctly answers the question.

17. A student is building a computer and needs to install the component that serves as the "brain." Which component should they install?

(A) Microprocessor
(B) Hard Disk
(C) RAM
(D) Motherboard

Correct Answer: A

Explanation: The microprocessor (CPU) is the brain of the computer.

18. Which memory type is the fastest but smallest in the memory hierarchy?

(A) RAM
(B) Registers
(C) Cache
(D) HDD

Correct Answer: B

Explanation: Registers are the fastest and smallest memory units.

19. In a network, which device inspects incoming data packets and sends them only to the intended device?

(A) Hub
(B) Router
(C) Switch
(D) Gateway

Correct Answer: C

Explanation: Switch — this correctly answers the question.

20. What type of software is an operating system?

(A) Application Software
(B) Utility Software

(C) Productivity Software
(D) System Software

Correct Answer: D

Explanation: An operating system is system software.

21. In the OSI model, which layer is responsible for routing and logical addressing?

(A) Network Layer
(B) Application Layer
(C) Transport Layer
(D) Data Link Layer

Correct Answer: A

Explanation: Network Layer — this correctly answers the question.

22. Which mode of data communication allows both devices to send and receive data simultaneously?

(A) Simplex
(B) Full-duplex
(C) Half-duplex
(D) Asynchronous

Correct Answer: B

Explanation: Full-duplex — this correctly answers the question.

23. What is the primary purpose of CSS in web development?

(A) To structure webpage content
(B) To add interactivity to webpages
(C) To control the presentation and layout of webpages
(D) To manage databases

Correct Answer: C

Explanation: To control the presentation and layout of webpages — this correctly answers the question.

24. Which memory type uses magnetized materials to store data?

(A) RAM
(B) ROM
(C) Cache
(D) Hard Disk

Correct Answer: D

Explanation: Magnetic memory uses magnetized materials (HDD).

25. What is the function of the Address Bus?

(A) Carries the addresses of data between the processor and memory
(B) Carries data between the processor and memory
(C) Carries control signals from the CPU
(D) Manages input/output operations

Correct Answer: A

Explanation: Carries the addresses of data between the processor and memory — this correctly answers the question.

B. Less Important / Secondary Topics

26. Which of the following is a characteristic of volatile memory?

(A) Loses data when power is off
(B) Retains data without power
(C) Stores data permanently
(D) Used for long-term storage

Correct Answer: A

Explanation: Volatile memory loses data when power is off.

27. What is the primary difference between a hub and a switch?

(A) Hub sends data only to the intended device; switch broadcasts to all
(B) Hub broadcasts data to all devices; switch sends only to the intended device
(C) Hub operates at the network layer; switch operates at the physical layer
(D) Hub is more intelligent than a switch

Correct Answer: B

Explanation: Hub broadcasts data to all devices; switch sends only to the intended device — this correctly answers the question.

28. Which of the following correctly describes ROM?

(A) Volatile memory used for temporary storage
(B) Read/write memory used for active programs
(C) Non-volatile memory that stores BIOS
(D) Magnetic storage device

Correct Answer: C

Explanation: ROM is non-volatile and stores the BIOS.

29. Which of the following is a characteristic of the fifth generation of computers?

(A) Use of vacuum tubes
(B) Use of transistors
(C) Use of integrated circuits
(D) Focus on Artificial Intelligence and Natural Language Processing

Correct Answer: D

Explanation: Focus on Artificial Intelligence and Natural Language Processing — this correctly answers the question.

30. What is the difference between asynchronous and synchronous transmission?

(A) Asynchronous has variable timing with start/stop bits; synchronous has fixed timing without start/stop bits
(B) Asynchronous has fixed timing; synchronous has variable timing
(C) Both use start and stop bits
(D) Both have fixed timing

Correct Answer: A

Explanation: Async uses start/stop bits; sync uses fixed timing.

31. Which of the following is an example of an output device?

(A) Keyboard
(B) Monitor
(C) Mouse
(D) Scanner

Correct Answer: B

Explanation: Monitor — this correctly answers the question.

32. What is the purpose of the `target="_blank"` attribute in an HTML link?

(A) Opens the link in the same tab
(B) Opens the link in a new browser
(C) Opens the link in a new tab or window
(D) Downloads the linked file

Correct Answer: C

Explanation: Opens the link in a new tab or window — this correctly answers the question.

33. Which type of network architecture requires each computer to act as either a server or a client, but not both simultaneously?

(A) Peer-to-Peer Network
(B) Metropolitan Area Network
(C) Wide Area Network

(D) Client/Server Network

Correct Answer: D

Explanation: In client/server, each computer is either a server or a client.

34. What is the function of the Program Counter (PC) register?

(A) Contains the memory address of the next instruction to be executed
(B) Holds the memory location of data to be accessed
(C) Holds data being transferred to or from memory
(D) Contains the current instruction during processing

Correct Answer: A

Explanation: Contains the memory address of the next instruction to be executed — this correctly answers the question.

35. Which of the following is an example of application software?

(A) Microsoft Windows
(B) Microsoft Word
(C) macOS
(D) Linux

Correct Answer: B

Explanation: Microsoft Word is application software.

36. A computer technician is upgrading a system. The user complains that the computer is slow when running multiple programs. Which component would most likely improve performance if upgraded?

(A) Monitor
(B) Printer
(C) RAM
(D) Keyboard

Correct Answer: C

Explanation: RAM — this correctly answers the question.

37. A network administrator needs to connect a local network to the internet. Which device should they use?

(A) Hub
(B) Switch
(C) Gateway
(D) Router

Correct Answer: D

Explanation: Router — this correctly answers the question.

38. A student writes a program in a language that closely resembles English and uses commands like `print` and `if`. What type of language is this?

(A) High-Level Language
(B) Machine Language
(C) Assembly Language
(D) Low-Level Language

Correct Answer: A

Explanation: High-Level Language — this correctly answers the question.

39. Which of the following best explains why the Von Neumann architecture is still used in most modern computers?

(A) It is the only architecture that works
(B) It is based on the stored-program concept
(C) It uses the least amount of electricity
(D) It is the simplest to manufacture

Correct Answer: B

Explanation: Von Neumann is based on the stored-program concept.

40. A company needs to ensure that its data is not lost if their server fails. What should they implement?

(A) Increase RAM
(B) Use a larger monitor
(C) Backup data to external storage
(D) Install a faster CPU

Correct Answer: C

Explanation: Backup data to external storage — this correctly answers the question.

41. In a peer-to-peer network with 8 computers, what is a major limitation compared to a client/server network?

(A) It is more expensive
(B) It cannot share files
(C) It requires a dedicated server
(D) It has limited security and management

Correct Answer: D

Explanation: It has limited security and management — this correctly answers the question.

42. A user wants to send a file to a printer. What type of data transmission is this?

(A) Simplex
(B) Full-duplex
(C) Half-duplex
(D) Synchronous

Correct Answer: A

Explanation: Sending to a printer is simplex (one-way).

43. Which of the following correctly lists the layers of the OSI model from top to bottom?

(A) Physical, Data Link, Network, Transport, Session, Presentation, Application
(B) Application, Presentation, Session, Transport, Network, Data Link, Physical
(C) Application, Session, Presentation, Transport, Network, Data Link, Physical
(D) Transport, Network, Data Link, Physical, Application, Presentation, Session

Correct Answer: B

Explanation: Application, Presentation, Session, Transport, Network, Data Link, Physical — this correctly answers the question.

44. A webpage displays content that changes based on user input. What type of website is this?

(A) Static Website
(B) Informational Website
(C) Dynamic Website
(D) Personal Website

Correct Answer: C

Explanation: Dynamic Website — this correctly answers the question.

45. Which of the following is NOT a function of an operating system?

(A) Managing memory
(B) Providing a user interface
(C) Managing files and directories
(D) Creating spreadsheets

Correct Answer: D

Explanation: Creating spreadsheets is application software, not the OS.

46. A user complains that their computer is running slowly. Which of the following is a possible memory-related reason?

(A) Insufficient RAM

(B) The monitor is too small
(C) The printer is offline
(D) The keyboard is dusty

Correct Answer: A

Explanation: Insufficient RAM — this correctly answers the question.

47. A small business wants to set up a network for 10 computers. They need to share files, printers, and an internet connection. Which network architecture is most suitable?

(A) Peer-to-Peer
(B) Client/Server
(C) Standalone
(D) Mesh

Correct Answer: B

Explanation: Client/Server — this correctly answers the question.

48. A student wants to add a border to a table using CSS. Which property should they use?

(A) `table-border`
(B) `outline`
(C) `border`
(D) `edge`

Correct Answer: C

Explanation: `border` — this correctly answers the question.

49. Which of the following best describes the difference between the Internet and the World Wide Web?

(A) They are the same thing
(B) The WWW is the infrastructure; the Internet is a service on it
(C) The Internet is only for email; the WWW is for websites
(D) The Internet is the infrastructure; the WWW is a service on it

Correct Answer: D

Explanation: The Internet is the infrastructure; the WWW is a service.

50. A company wants to ensure that its employees use software legally. What should they implement?

(A) Use only authorized software and follow licensing terms
(B) Ignore software licenses
(C) Download cracked software
(D) Share software licenses

Correct Answer: A

Explanation: Use only authorized software and follow licensing terms — this correctly answers the question.

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Computer Science Grade 9 — Chapter 2

Computational Thinking and Algorithms

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Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is a problem in computer science?

(A) A challenge or situation that needs to be overcome using some action
(B) A mathematical equation
(C) A type of software
(D) A hardware component

Correct Answer: A

Explanation: In computer science, a problem is a challenge or situation that needs to be overcome using some action.

2. Which type of computing problem requires a Yes or No answer?

(A) Search Problem
(B) Decision Problem
(C) Counting Problem
(D) Sorting Problem

Correct Answer: B

Explanation: A decision problem occurs when a given input requires a binary response, either Yes or No.

3. What is the first step in problem solving?

(A) Design a plan
(B) Implement the plan
(C) Define and analyze the problem
(D) Evaluate

Correct Answer: C

Explanation: For simple problems, the first step is to define and analyze the problem: What is the problem and why is it happening?.

4. In the IPO model, what does the "P" stand for?

(A) Program
(B) Plan
(C) Protocol
(D) Processing

Correct Answer: D

Explanation: The IPO model stands for Input-Processing-Output. Processing refers to the operations the system performs on the input.

5. Which property of computational thinking involves breaking down larger problems into smaller, manageable ones?

(A) Decomposition
(B) Abstraction
(C) Pattern Recognition
(D) Algorithm Design

Correct Answer: A

Explanation: Decomposition — this correctly answers the question.

6. What is a flowchart?

(A) A type of software
(B) A diagrammatic representation of an algorithm
(C) A mathematical formula
(D) A network device

Correct Answer: B

Explanation: A flowchart is a diagrammatic representation of an algorithm. It describes what operations are required to solve a given problem.

7. Which symbol is used for decision making in a flowchart?

(A) Oval
(B) Parallelogram
(C) Diamond
(D) Rectangle

Correct Answer: C

Explanation: Graphically, the decision is represented with a diamond.

8. What is the primary purpose of logical thinking?

(A) To memorize facts
(B) To draw pictures
(C) To write code
(D) To analyze situations using reason and facts

Correct Answer: D

Explanation: Logical thinking refers to analyzing a particular situation or problem using reason and accordingly reaching up to one or more decisions that are sensible.

9. Which of the following is a counting problem?

(A) How many ways can you arrange 3 books?
(B) Is this number prime?
(C) Find the largest number in a list
(D) Is "aa" present in the sequence?

Correct Answer: A

Explanation: How many ways can you arrange 3 books? — this correctly answers the question.

10. What is the formula for the counting principle?

(A) A + B
(B) A × B
(C) A - B
(D) A ÷ B

Correct Answer: B

Explanation: The counting principle states that if an event/decision has A number of choices and another decision/event has B number of choices, then the total number of possible unique combinations would be A × B.

11. What does the "I" in IPO stand for?

(A) Internet
(B) Instruction
(C) Input
(D) Integer

Correct Answer: C

Explanation: The IPO model stands for Input-Processing-Output. I stands for Input.

12. Which of the following is an example of a decision problem?

(A) Find the maximum number in a list
(B) Count the number of students
(C) Sort the list in ascending order
(D) Is the number divisible by 5?

Correct Answer: D

Explanation: A decision problem requires a Yes or No answer. "Is the number divisible by 5?" is a decision problem.

13. What is an IPO chart?

(A) A tabular representation of Input, Process, and Output
(B) A type of flowchart
(C) A mathematical formula
(D) A network protocol

Correct Answer: A

Explanation: An IPO chart is a tabular representation of the Input, Process, and Output of a system.

14. What is the purpose of the oval symbol in a flowchart?

(A) Input/Output
(B) Start/End
(C) Process
(D) Decision

Correct Answer: B

Explanation: The oval symbol is used for the start and end of a flowchart.

15. What is algorithmic thinking?

(A) Breaking down problems
(B) Finding patterns
(C) Identifying steps and implementing them logically and efficiently
(D) Removing unnecessary details

Correct Answer: C

Explanation: Algorithmic thinking is a process that involves identifying the steps needed and then implementing those steps in a logical and efficient manner.

16. A student is asked to determine whether a given number is divisible by 5. What type of computing problem is this?

(A) Search Problem
(B) Counting Problem
(C) Sorting Problem
(D) Decision Problem

Correct Answer: D

Explanation: This is a decision problem because it requires a Yes or No answer (divisible or not divisible).

17. In the IPO model, what does "Output" refer to?

(A) Data that has been turned into information
(B) Data entered into the system
(C) Operations applied to the input
(D) The hardware used

Correct Answer: A

Explanation: Output is the thing that is presented to the environment. It is the data that has been turned into information.

18. Why is logical thinking important in computational thinking?

(A) It helps in memorizing facts
(B) It helps in analyzing situations using reason and facts
(C) It helps in drawing pictures
(D) It helps in writing code faster

Correct Answer: B

Explanation: It helps in analyzing situations using reason and facts — this correctly answers the question.

19. A student is creating a concept map for a science project. What is the primary purpose of a concept map?

(A) To show a sequence of steps
(B) To perform calculations
(C) To represent concepts and relationships between them
(D) To store data

Correct Answer: C

Explanation: A concept map is a graphical tool that represents concepts and relationships between them.

20. Which of the following best describes pattern recognition in computational thinking?

(A) Breaking down a problem into smaller parts
(B) Removing unnecessary details
(C) Creating a step-by-step plan
(D) Examining the problem for similarities with previously solved problems

Correct Answer: D

Explanation: Pattern Recognition involves examining the problem for a pattern or similarities between previously solved problems.

21. In a flowchart, what does a parallelogram represent?

(A) Input/Output
(B) Start/End
(C) Process
(D) Decision

Correct Answer: A

Explanation: The graphical representation of input and output is a parallelogram.

22. A student is asked to find the largest of three numbers. What type of problem is this?

(A) Decision Problem
(B) Search Problem
(C) Counting Problem
(D) Sorting Problem

Correct Answer: B

Explanation: This is a search problem because it involves finding a specific element (the largest number) within a set of possibilities.

23. What is the primary difference between a simple problem and a complex problem in problem-solving?

(A) Simple problems have no solution
(B) Simple problems require coding
(C) Complex problems require decomposition into sub-problems
(D) Complex problems cannot be solved

Correct Answer: C

Explanation: Complex problems require decomposition into sub-problems — this correctly answers the question.

24. In the context of computational thinking, what does abstraction involve?

(A) Breaking down problems
(B) Finding patterns
(C) Creating step-by-step plans
(D) Removing unnecessary details to identify essential information

Correct Answer: D

Explanation: Abstraction involves removing the unnecessary details from the solution so you can identify essential information.

25. A student uses an IPO chart to plan a program. What does the "Process" column contain?

(A) Operations that will be applied on the input
(B) Data entered in the system
(C) Data that has been turned into information
(D) The final result

Correct Answer: A

Explanation: The Process column contains the operations that the system will perform on the input to generate information.

B. Less Important / Secondary Topics

26. What is the output of the following logical reasoning? Fact: Islamabad is a city. Fact: Cities have a mayor. Inferred: ?

(A) Islamabad has a mayor
(B) Islamabad is a country
(C) Islamabad is not a city
(D) Cities do not have mayors

Correct Answer: A

Explanation: Using logical thinking, we infer that Islamabad has a mayor based on the facts that it is a city and cities have mayors.

27. Which of the following is a search problem?

(A) Is the number even?
(B) Find the largest number in a list
(C) How many outfits can you make?
(D) Is "ab" in the string?

Correct Answer: B

Explanation: Find the largest number in a list — this correctly answers the question.

28. What is the difference between a flowchart and a concept map?

(A) Flowchart shows relationships; concept map shows steps
(B) Both show steps
(C) Flowchart shows steps; concept map shows relationships
(D) Both show relationships

Correct Answer: C

Explanation: A flowchart is a diagrammatic representation of an algorithm (steps), while a concept map represents concepts and relationships.

29. A student is asked to solve a complex problem. They break it into smaller sub-problems and solve each one. Which property of computational thinking are they applying?

(A) Abstraction
(B) Pattern Recognition
(C) Algorithm Design
(D) Decomposition

Correct Answer: D

Explanation: Decomposition — this correctly answers the question.

30. What does the "O" in IPO stand for?

(A) Output
(B) Operation
(C) Object
(D) Order

Correct Answer: A

Explanation: The IPO model stands for Input-Processing-Output. O stands for Output.

31. In a flowchart, what does a rectangle represent?

(A) Start/End
(B) Process
(C) Input/Output
(D) Decision

Correct Answer: B

Explanation: The graphical representation of processing is a rectangle.

32. Which of the following is an example of a counting problem?

(A) Is this number prime?
(B) Find the largest number
(C) How many ways can you arrange 4 books?
(D) Is "aa" present?

Correct Answer: C

Explanation: How many ways can you arrange 4 books? — this correctly answers the question.

33. What is the 4-step problem-solving process for simple problems?

(A) Decompose, Design, Implement, Evaluate
(B) Define, Decompose, Implement, Evaluate
(C) Design, Implement, Evaluate, Repeat
(D) Define, Design, Implement, Evaluate

Correct Answer: D

Explanation: For simple problems, the 4 steps are: define and analyze, design a plan, implement the plan, and evaluate.

34. A student is analyzing a problem and realizes it is similar to a problem they solved last week. Which computational thinking property are they using?

(A) Pattern Recognition
(B) Decomposition
(C) Abstraction
(D) Algorithm Design

Correct Answer: A

Explanation: Pattern Recognition involves examining the problem for a pattern or similarities between previously solved problems.

35. What is the purpose of the `prompt()` function in JavaScript?

(A) To display an alert box
(B) To take user input
(C) To change the background color
(D) To create a loop

Correct Answer: B

Explanation: The `prompt()` function pops up a message window that takes input from the user.

36. A student is asked to determine whether a given string contains the sequence "ab". What type of computing problem is this?

(A) Counting Problem
(B) Search Problem
(C) Decision Problem
(D) Sorting Problem

Correct Answer: C

Explanation: This is a decision problem because it requires a Yes or No answer (the sequence is present or not present).

37. A student needs to find the largest number in a list of 100 numbers. What type of problem is this, and what approach should they use?

(A) Decision Problem; Yes/No answer
(B) Counting Problem; count combinations
(C) Sorting Problem; arrange numbers
(D) Search Problem; find the maximum

Correct Answer: D

Explanation: This is a search problem because it involves finding a specific element (the largest number) within a set of possibilities.

38. A company wants to determine how many different combinations of products they can offer if they have 3 types of shirts and 4 types of pants. What is the total number of combinations?

(A) 12
(B) 7
(C) 34
(D) 43

Correct Answer: A

Explanation: 12 — this correctly answers the question.

39. A student is designing a flowchart for a program that checks if a number is even or odd. Which symbol should they use for the decision?

(A) Oval
(B) Diamond
(C) Parallelogram
(D) Rectangle

Correct Answer: B

Explanation: The diamond symbol is used for decision making in a flowchart.

40. A student is creating a concept map for the water cycle. Which of the following correctly represents the relationship between evaporation and condensation?

(A) Evaporation determines Condensation
(B) Evaporation includes Condensation
(C) Evaporation leads to Condensation
(D) Evaporation is unrelated to Condensation

Correct Answer: C

Explanation: Evaporation leads to Condensation — this correctly answers the question.

41. A programmer is writing an algorithm to find the largest of three numbers. They write: "Check if A › B and A › C, then A is the largest." What step of the problem-solving process does this represent?

(A) Define and analyze
(B) Implement
(C) Evaluate
(D) Design a plan

Correct Answer: D

Explanation: This represents designing a plan (algorithm) for solving the problem.

42. A student is asked to solve a complex problem. They break it into smaller sub-problems and solve each one. Which property of computational thinking are they applying?

(A) Decomposition
(B) Abstraction
(C) Pattern Recognition
(D) Algorithm Design

Correct Answer: A

Explanation: Decomposition — this correctly answers the question.

43. In the context of a video game, what would be considered "unnecessary information" according to the principle of abstraction?

(A) Location of the exit
(B) Weather conditions
(C) Position of enemies
(D) Location of items

Correct Answer: B

Explanation: In the game example, unnecessary information includes the weather, as it does not affect gameplay.

44. A student is analyzing a problem and realizes it is similar to a problem they solved last week. Which computational thinking property are they using?

(A) Decomposition
(B) Abstraction
(C) Pattern Recognition
(D) Algorithm Design

Correct Answer: C

Explanation: Pattern Recognition involves examining the problem for a pattern or similarities between previously solved problems.

45. A flowchart for finding the sum of five numbers includes: Start → Input A, B, C, D, E → SUM = A + B + C + D + E → Output SUM → End. What does the rectangle symbol represent?

(A) Start
(B) Input
(C) Output
(D) Process

Correct Answer: D

Explanation: Process — this correctly answers the question.

46. A school wants to create a timetable for exams. Which component of the IPO model would contain the operations like assigning subjects to dates and allocating students to halls?

(A) Process
(B) Input
(C) Output
(D) Storage

Correct Answer: A

Explanation: Process — this correctly answers the question.

47. A student wants to plan a birthday party. They break the task into smaller tasks: guest list, invitations, food, decorations, activities. Which computational thinking property are they applying?

(A) Abstraction
(B) Decomposition
(C) Pattern Recognition
(D) Algorithm Design

Correct Answer: B

Explanation: Decomposition — this correctly answers the question.

48. In a flowchart to determine if a student passes or fails (passing marks = 40), what should the decision symbol check?

(A) Input marks
(B) Output "Pass"
(C) Marks ›= 40
(D) Start

Correct Answer: C

Explanation: The decision symbol checks the condition. In this case, it checks if marks are greater than or equal to 40.

49. A company has 3 types of shirts and 4 types of pants. Using the counting principle, what is the total number of unique outfits?

(A) 7
(B) 34
(C) 43
(D) 12

Correct Answer: D

Explanation: 12 — this correctly answers the question.

50. Which of the following best describes the relationship between logical thinking and algorithmic thinking?

(A) Logical thinking provides reasoning; algorithmic thinking provides steps
(B) They are the same thing
(C) Algorithmic thinking provides reasoning; logical thinking provides steps
(D) They are unrelated

Correct Answer: A

Explanation: Logical thinking provides reasoning; algorithmic thinking provides steps — this correctly answers the question.

Public Library · FBISE / NBF

Computer Science Grade 9 — Chapter 3

Programming Fundamentals

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What does HTML stand for?

(A) Hypertext Markup Language
(B) High-Level Machine Language
(C) Hyperlink Text Management Language
(D) Home Tool Markup Language

Correct Answer: A

Explanation: HTML stands for Hypertext Markup Language, the language used to define and display content in the form of a webpage.

2. Which HTML tag is used to define the title of a webpage?

(A) `‹head›`
(B) `‹title›`
(C) `‹body›`
(D) `‹html›`

Correct Answer: B

Explanation: `‹title›` — this correctly answers the question.

3. What is the correct way to create a hyperlink in HTML?

(A) `‹link href="url"›text‹/link›`
(B) `‹href="url"›text‹/href›`
(C) `‹a href="url"›text‹/a›`
(D) `‹url›text‹/url›`

Correct Answer: C

Explanation: Hyperlinks are created with the `‹a›` tag-pair and the `href` attribute.

4. Which CSS property is used to add a border to a table?

(A) `table-border`
(B) `outline`
(C) `edge`
(D) `border`

Correct Answer: D

Explanation: The `border` property is used to add a border to a.

5. What is the correct way to declare a variable in JavaScript?

(A) `var x = 5;`
(B) `variable x = 5;`
(C) `int x = 5;`
(D) `x := 5;`

Correct Answer: A

Explanation: In JavaScript, variables are declared with the `var` keyword.

6. Which JavaScript function is used to display an alert box?

(A) `message()`
(B) `alert()`
(C) `popup()`

(D) `msg()`

Correct Answer: B

Explanation: The `alert()` function displays an alert box with a message.

7. What does the `‹br›` tag do in HTML?

(A) Creates a bold text
(B) Creates a bullet list
(C) Inserts a line break
(D) Inserts an image

Correct Answer: C

Explanation: The `‹br›` tag is used to split a sentence into multiple lines.

8. Which JavaScript operator gives the remainder of a division?

(A) `/`
(B) `*`
(C) `+`
(D) `%`

Correct Answer: D

Explanation: `%` — this correctly answers the question.

9. What is the correct syntax for a `for` loop in JavaScript?

(A) `for (i = 0; i ‹ 10; i++)`
(B) `for (i ‹ 10; i++)`
(C) `for i = 0 to 10`
(D) `loop (i = 0; i ‹ 10; i++)`

Correct Answer: A

Explanation: `for (i = 0; i ‹ 10; i++)` — this correctly answers the question.

10. Which HTML tag is used to create an ordered list?

(A) `‹ul›`
(B) `‹ol›`
(C) `‹li›`
(D) `‹list›`

Correct Answer: B

Explanation: `‹ol›` — this correctly answers the question.

11. What is the primary purpose of CSS?

(A) To structure webpage content
(B) To add interactivity to webpages
(C) To control the presentation and layout of webpages
(D) To manage databases

Correct Answer: C

Explanation: To control the presentation and layout of webpages — this correctly answers the question.

12. Which HTML tag is used to insert an image into a webpage?

(A) `‹picture›`
(B) `‹image›`
(C) `‹src›`
(D) `‹img›`

Correct Answer: D

Explanation: The `‹img›` tag is used to insert an image, with attributes like `src` and `alt`.

13. What is the correct way to add a comment in HTML?

(A) `‹!-- This is a comment --›`
(B) `// This is a comment`
(C) `/* This is a comment */`

(D) `# This is a comment`

Correct Answer: A

Explanation: HTML comments are written between `‹!--` and `--›`.

14. Which JavaScript keyword is used to define a function?

(A) `def`
(B) `function`
(C) `func`
(D) `define`

Correct Answer: B

Explanation: The `function` keyword is used to define a function in JavaScript.

15. What will be the output of `10 % 3`?

(A) 3
(B) 0
(C) 1
(D) 10

Correct Answer: C

Explanation: 10 % 3 = 1 (the remainder when 10 is divided by 3).

16. Which CSS property is used to change the text color of an element?

(A) `text-color`
(B) `font-color`
(C) `text-style`
(D) `color`

Correct Answer: D

Explanation: `color` — this correctly answers the question.

17. What is the purpose of the `‹ul›` tag in HTML?

(A) Creates an unordered list
(B) Creates an ordered list
(C) Creates a table
(D) Creates a paragraph

Correct Answer: A

Explanation: Creates an unordered list — this correctly answers the question.

18. In JavaScript, what is the correct way to write a conditional statement?

(A) `if x › 5 then`
(B) `if (x › 5) { }`
(C) `if x › 5 { }`
(D) `when (x › 5) { }`

Correct Answer: B

Explanation: The correct syntax for an if statement is `if (condition) { }`.

19. What does the `‹video›` tag do in HTML?

(A) Creates a video file
(B) Links to a video file
(C) Embeds a video player in a webpage
(D) Downloads a video file

Correct Answer: C

Explanation: Embeds a video player in a webpage — this correctly answers the question.

20. Which JavaScript method is used to display text on a webpage?

(A) `console.log()`
(B) `alert()`
(C) `prompt()`

(D) `document.write()`

Correct Answer: D

Explanation: `document.write()` — this correctly answers the question.

21. What is the difference between `‹ol›` and `‹ul›` tags in HTML?

(A) `‹ol›` creates numbers; `‹ul›` creates bullets
(B) `‹ol›` creates bullets; `‹ul›` creates numbers
(C) Both create bullet lists
(D) Both create numbered lists

Correct Answer: A

Explanation: `‹ol›` creates numbers; `‹ul›` creates bullets — this correctly answers the question.

22. What is the purpose of the `prompt()` function in JavaScript?

(A) To display an alert box
(B) To take user input
(C) To change the background color
(D) To create a loop

Correct Answer: B

Explanation: The `prompt()` function pops up a message window that takes input from the user.

23. Which CSS property is used to center text within an element?

(A) `align: center;`
(B) `center: text;`
(C) `text-align: center;`
(D) `text-center: true;`

Correct Answer: C

Explanation: `text-align: center;` — this correctly answers the question.

24. What is the purpose of the `alt` attribute in an `‹img›` tag?

(A) Sets the image size
(B) Sets the image border
(C) Sets the image position
(D) Provides a description of the image

Correct Answer: D

Explanation: The `alt` parameter provides a description of the image, which is important for accessibility.

25. What is the output of the following JavaScript code? `var a = 5; var b = 2; document.write(a % b);`

(A) 1
(B) 2.5
(C) 0
(D) 5

Correct Answer: A

Explanation: 5 % 2 = 1 (the remainder when 5 is divided by 2).

B. Less Important / Secondary Topics

26. What is the DOM (Document Object Model)?

(A) A standard that represents an HTML document as a tree of nodes
(B) A type of database
(C) A programming language
(D) A network protocol

Correct Answer: A

Explanation: The DOM is a standard which provides mutual interpretation where grammar of a language can be associated with and can coexist on various operating systems.

27. How many times will the inner loop execute if the outer loop runs 4 times and the inner loop runs 3 times for each outer iteration?

(A) 7
(B) 12
(C) 4
(D) 3

Correct Answer: B

Explanation: 12 — this correctly answers the question.

28. What is the purpose of the ` ` entity in HTML?

(A) A new line
(B) A tab space
(C) A non-breaking space
(D) A paragraph break

Correct Answer: C

Explanation: A non-breaking space — this correctly answers the question.

29. Which of the following is the correct function definition that returns the sum of two numbers?

(A) `function add(a, b) { a + b; }`
(B) `def add(a, b) { return a + b; }`
(C) `function add(a, b) { sum = a + b; }`
(D) `function add(a, b) { return a + b; }`

Correct Answer: D

Explanation: The correct function definition with return is `function add(a, b) { return a + b; }`.

30. What is the primary difference between an array and a variable in JavaScript?

(A) A variable stores a single value; an array stores multiple values
(B) A variable stores multiple values; an array stores a single value
(C) Both store multiple values
(D) Both store single values

Correct Answer: A

Explanation: A variable stores a single value, while an array is a data type that can hold multiple values under one name.

31. What is the correct way to add a background image to a webpage using CSS?

(A) `image: url('image.jpg');`
(B) `background-image: url('image.jpg');`
(C) `background: image.jpg;`
(D) `bg-image: url('image.jpg');`

Correct Answer: B

Explanation: The `background-image: url('...')` property sets an image as the background.

32. What is the purpose of the `target="_blank"` attribute in an HTML link?

(A) Opens the link in the same tab
(B) Opens the link in a new browser
(C) Opens the link in a new tab or window
(D) Downloads the linked file

Correct Answer: C

Explanation: Opens the link in a new tab or window — this correctly answers the question.

33. What is the output of the following JavaScript code? `var x = 10; if (x › 5) { document.write("Hello"); } else { document.write("Bye"); }`

(A) Bye
(B) Nothing
(C) Error

(D) Hello

Correct Answer: D

Explanation: Since x = 10 and 10 › 5 is true, "Hello" is displayed.

34. What is the purpose of the `‹table›` tag in HTML?

(A) Creates a table
(B) Creates a list
(C) Creates a paragraph
(D) Creates an image

Correct Answer: A

Explanation: Creates a table — this correctly answers the question.

35. Which JavaScript method is used to take user input?

(A) `alert()`
(B) `prompt()`
(C) `document.write()`
(D) `console.log()`

Correct Answer: B

Explanation: The `prompt()` function is used to take input from the user.

36. A student wants to display their name on a webpage. Which JavaScript function should they use?

(A) `alert()`
(B) `prompt()`
(C) `document.write()`
(D) `console.log()`

Correct Answer: C

Explanation: `document.write()` — this correctly answers the question.

37. A user clicks a button on a webpage and a popup appears asking "Are you sure?". Which JavaScript function is responsible for this?

(A) `document.write()`
(B) `prompt()`
(C) `confirm()`
(D) `alert()`

Correct Answer: D

Explanation: `alert()` — this correctly answers the question.

38. A student wants to create a list of their favorite food items with numbers. Which HTML tag should they use?

(A) `‹ol›`
(B) `‹ul›`
(C) `‹li›`
(D) `‹list›`

Correct Answer: A

Explanation: `‹ol›` — this correctly answers the question.

39. What will be the output of the following code? `var a = 5; var b = 2; var c = a % b; document.write(c);`

(A) 2.5
(B) 1
(C) 0
(D) 5

Correct Answer: B

Explanation: 5 % 2 = 1 (the remainder when 5 is divided by 2).

40. A student wants to add a background image to their webpage that stays fixed while scrolling. Which CSS property should they use?

(A) `background-image`
(B) `background-color`
(C) `background-attachment: fixed`
(D) `background-repeat`

Correct Answer: C

Explanation: `background-attachment: fixed` — this correctly answers the question.

41. In a nested loop, how many times will the inner loop execute if the outer loop runs 4 times and the inner loop runs 3 times for each outer iteration?

(A) 7
(B) 4
(C) 3
(D) 12

Correct Answer: D

Explanation: 12 — this correctly answers the question.

42. A student wants to check if a number is greater than 10. Which JavaScript statement should they use?

(A) `if (number › 10) { }`
(B) `if number › 10 then { }`
(C) `if (number ›› 10) { }`
(D) `when (number › 10) { }`

Correct Answer: A

Explanation: The correct syntax for an if statement is `if (number › 10) { }`.

43. What does the ` ` entity represent in HTML?

(A) A new line
(B) A non-breaking space
(C) A tab space
(D) A paragraph break

Correct Answer: B

Explanation: A non-breaking space — this correctly answers the question.

44. A student wants to create a function that calculates the sum of two numbers. Which is the correct function definition?

(A) `function add(a, b) { a + b; }`
(B) `def add(a, b) { return a + b; }`
(C) `function add(a, b) { return a + b; }`
(D) `function add(a, b) { sum = a + b; }`

Correct Answer: C

Explanation: The correct function definition with return is `function add(a, b) { return a + b; }`.

45. Which CSS property is used to center text within an element?

(A) `align: center;`
(B) `center: text;`
(C) `text-center: true;`
(D) `text-align: center;`

Correct Answer: D

Explanation: `text-align: center;` — this correctly answers the question.

46. A student wants to create a webpage with a heading, a paragraph, and an image. Which HTML code is correct?

(A) `‹h1›Heading‹/h1›‹p›Paragraph‹/p›‹img src="image.jpg"›`
(B) `‹h1›Heading‹/h1›‹p›Paragraph‹/p›‹image src="image.jpg"›`
(C) `‹heading›Heading‹/heading›‹p›Paragraph‹/p›‹img src="image.jpg"›`

(D) `‹h1›Heading‹/h1›‹paragraph›Paragraph‹/paragraph›‹img src="image.jpg"›`

Correct Answer: A

Explanation: The correct tags are `‹h1›` for heading, `‹p›` for paragraph, and `‹img›` for image.

47. What is the output of the following JavaScript code? `var x = 5; var y = 10; if (x › y) { document.write("A"); } else if (x ‹ y) { document.write("B"); } else { document.write("C"); }`

(A) A
(B) B
(C) C
(D) Error

Correct Answer: B

Explanation: Since x = 5 and y = 10, x ‹ y is true, so "B" is displayed.

48. Which of the following is the correct way to add a video clip to a website?

(A) `‹video src="video.mp4" controls›‹/video›`
(B) `‹media src="video.mp4" controls›‹/media›`
(C) `‹video›‹source src="video.mp4" type="video/mp4"›‹/video›`
(D) `‹movie src="video.mp4" controls›‹/movie›`

Correct Answer: C

Explanation: The `‹video›` tag with a `‹source›` tag specifies the video file and its type.

49. What is the purpose of the `id` attribute in HTML?

(A) To style an element
(B) To create a link
(C) To insert an image
(D) To uniquely identify an element

Correct Answer: D

Explanation: To uniquely identify an element — this correctly answers the question.

50. Which of the following correctly describes the relationship between HTML, CSS, and JavaScript?

(A) HTML provides structure, CSS provides presentation, JavaScript provides interactivity
(B) HTML provides presentation, CSS provides structure, JavaScript provides interactivity
(C) HTML provides interactivity, CSS provides structure, JavaScript provides presentation
(D) All three provide structure

Correct Answer: A

Explanation: HTML defines the content structure, CSS controls the presentation and layout, and JavaScript adds inter.

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Computer Science Grade 9 — Chapter 4

Data and Analysis

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is the process of examining raw data to draw conclusions?

(A) Data Analytics
(B) Data Science
(C) Machine Learning
(D) Big Data

Correct Answer: A

Explanation: Data analytics is the process of examining raw data to draw conclusions about the information it contains.

2. Which field uses mathematics, statistics, data analysis, and machine learning to extract knowledge from data?

(A) Data Analytics
(B) Data Science
(C) Database Management
(D) Computer Networking

Correct Answer: B

Explanation: Data Science is an interdisciplinary field that uses mathematics, statistics, data analysis, and machine learning to analyze data and extract knowledge.

3. What is a structured or organized collection of data usually associated with a unique body of work?

(A) Database
(B) Data Warehouse
(C) Dataset
(D) Data Mining

Correct Answer: C

Explanation: A dataset is a structured or processed collection of data usually associated with a unique body of work.

4. Which type of data describes an object or group of objects that can be labeled according to a category?

(A) Quantitative Data
(B) Discrete Data
(C) Continuous Data
(D) Qualitative Data

Correct Answer: D

Explanation: Qualitative or Categorical data describes an object or a group of objects that can be labeled according to some group or category.

5. What is the characteristic of ordinal data?

(A) Has a specific order or ranking
(B) No order or ranking
(C) Can only take certain values
(D) Can take any value within a range

Correct Answer: A

Explanation: Ordinal data sees a specific order or ranking. It uses a certain scale or measure to group data into categories.

6. Which data type deals with numeric values that can be computed mathematically?

(A) Qualitative Data
(B) Quantitative Data
(C) Categorical Data
(D) Nominal Data

Correct Answer: B

Explanation: Quantitative or Numerical data deals with numeric values that can be computed mathematically to draw conclusions.

7. What is the term for data that can only take certain values and cannot be subdivided?

(A) Continuous Data
(B) Ordinal Data
(C) Discrete Data
(D) Nominal Data

Correct Answer: C

Explanation: Discrete data includes data which can only take certain values and cannot be further subdivided into smaller units.

8. Which of the following is an example of continuous data?

(A) Number of students in a class
(B) Number of cars in a parking lot
(C) Number of employees in a company
(D) Weight of newborn babies

Correct Answer: D

Explanation: Continuous data refers to the unspecified number of possible measurements between two realistic points. Weight is an example.

9. What is the primary characteristic of Big Data?

(A) Large volume, high velocity, wide variety
(B) Small volume, slow velocity, limited variety
(C) Medium volume, medium velocity, limited variety
(D) Small volume, high velocity, wide variety

Correct Answer: A

Explanation: Big Data is characterized by the three Vs: Volume, Velocity, and Variety.

10. Which of the following is a source of primary data?

(A) Government records
(B) Surveys and interviews
(C) Research papers
(D) Books

Correct Answer: B

Explanation: Primary data is collected directly by questionnaires, surveys, and interviews.

11. What does the "V" in the three Vs of Big Data stand for?

(A) Value, Velocity, Variety
(B) Volume, Verification, Variety
(C) Volume, Velocity, Variety
(D) Volume, Velocity, Validation

Correct Answer: C

Explanation: The three Vs of Big Data are Volume, Velocity, and Variety.

12. Which of the following is a non-relational database?

(A) Oracle
(B) MS-Access
(C) IBM Db2

(D) MongoDB

Correct Answer: D

Explanation: Non-relational databases store data in forms such as key-value pairs, column families, or graphs. MongoDB is an example.

13. What is the name of the database management system that manages relational databases?

(A) DBMS
(B) NoSQL
(C) RDBMS
(D) SQL

Correct Answer: A

Explanation: DBMS is the interface between the database and the end user, providing a platform to create, modify, and retrieve data.

14. What is the purpose of summary statistics?

(A) To store data permanently
(B) To provide a quick overview of characteristics of data
(C) To create visualizations
(D) To delete data

Correct Answer: B

Explanation: To provide a quick overview of characteristics of data — this correctly answers the question.

15. Which of the following is a data source mentioned in the chapter?

(A) Websites
(B) Surveys
(C) All of the above
(D) Sensors

Correct Answer: C

Explanation: Websites, surveys, and sensors are all sources of data mentioned in the chapter.

16. What is the difference between interval and ratio scaled data?

(A) Interval data has no order; ratio data has order
(B) Interval data is qualitative; ratio data is quantitative
(C) Ratio data cannot be added or subtracted
(D) Ratio data has a true zero point; interval data does not

Correct Answer: D

Explanation: Ratio scaled data has a true zero point (e.g., 0 Kg means absence of weight), while interval scaled data does not (e.g., 0°C does not mean absence of temperature).

17. Which database management system is an example of a relational database?

(A) MySQL
(B) MongoDB
(C) Cassandra
(D) Redis

Correct Answer: A

Explanation: MySQL — this correctly answers the question.

18. Which of the following is NOT a source of secondary data?

(A) Government records
(B) Interviews
(C) Research papers
(D) Books

Correct Answer: B

Explanation: Interviews are a primary data source, collected directly from respondents.

19. What is the key characteristic of Big Data's "Velocity"?

(A) The amount of data
(B) The various formats of data
(C) The speed at which data is received
(D) The cost of data storage

Correct Answer: C

Explanation: Velocity refers to the speed at which data is received and acted on.

20. Which type of data is "gender" (Male, Female, Other)?

(A) Ordinal Data
(B) Discrete Data
(C) Continuous Data
(D) Nominal Data

Correct Answer: D

Explanation: Nominal data does not have any order. Gender is an example of nominal data.

21. What is sentiment analysis used for?

(A) To identify customer sentiments from reviews
(B) To analyze numerical data
(C) To store data in databases
(D) To visualize data

Correct Answer: A

Explanation: To identify customer sentiments from reviews — this correctly answers the question.

22. What is the main difference between a dataset and a database?

(A) A dataset is larger than a database
(B) A dataset is a collection of data; a database is an organized collection of multiple datasets
(C) A database is a single table; a dataset is multiple tables
(D) They are the same thing

Correct Answer: B

Explanation: A dataset is a structured collection of data, while a database is an organized collection of data stored in multiple datasets or.

23. Which of the following is a characteristic of unstructured data?

(A) Organized in tables
(B) Stored in relational databases
(C) Not organized in a predefined format
(D) Easy to search using SQL

Correct Answer: C

Explanation: Unstructured data (like text, images, videos) is not organized in a predefined format and requires additional preprocessing.

24. What is predictive analysis?

(A) The process of storing data
(B) The visualization of data
(C) The collection of data
(D) The use of data to predict future trends based on historical data

Correct Answer: D

Explanation: Predictive analysis is the use of data to predict future trends and events based on historical data.

25. Which of the following is a challenge of Big Data?

(A) All of the above
(B) Data quality
(C) Data security and privacy
(D) Rapid growth of data

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

B. Less Important / Secondary Topics

26. What is the role of a database in data science?

(A) To store and manage large amounts of data
(B) To visualize data
(C) To write code
(D) To create networks

Correct Answer: A

Explanation: Databases provide structured storage, quick retrieval, and reliable management of large data volumes, which are essential for data science.

27. Which of the following is a primary data collection method?

(A) Websites
(B) Interviews
(C) Government records
(D) Research papers

Correct Answer: B

Explanation: Interviews involve direct interaction with respondents and are a primary data collection method.

28. What is the purpose of data cleaning?

(A) To store data
(B) To visualize data
(C) To remove errors, duplicates, and inconsistencies from data
(D) To delete all data

Correct Answer: C

Explanation: Data cleaning ensures that data is accurate, consistent, and reliable before analysis.

29. Which of the following is an example of ordinal data?

(A) Gender
(B) City
(C) Color
(D) Test grades (A, B, C)

Correct Answer: D

Explanation: Ordinal data has a specific order or ranking. Test grades have a clear order from highest to lowest.

30. What is the difference between structured and unstructured data?

(A) Structured data is organized in tables; unstructured data is not
(B) Structured data is qualitative; unstructured data is quantitative
(C) Structured data is continuous; unstructured data is discrete
(D) They are the same

Correct Answer: A

Explanation: Structured data is organized in tables (rows and columns), while unstructured data (text, images, videos) is not organized in a predefined format.

31. Which of the following is a relational database?

(A) MongoDB
(B) Oracle
(C) Cassandra
(D) Redis

Correct Answer: B

Explanation: Oracle is a relational database management system that stores data in.

32. What is the main purpose of Big Data analytics in business?

(A) To store data in databases

(B) To create websites
(C) To make better business decisions by analyzing large volumes of data
(D) To design networks

Correct Answer: C

Explanation: To make better business decisions by analyzing large volumes of data — this correctly answers the question.

33. Which of the following is a source of data mentioned in the chapter?

(A) Websites
(B) Surveys
(C) Sensors
(D) All of the above

Correct Answer: D

Explanation: Websites, surveys, and sensors are all data sources mentioned in the chapter.

34. What is the difference between a database and a dataset?

(A) A database is an organized collection of data; a dataset is a collection of related data
(B) A database is a single table; a dataset is multiple tables
(C) A database is smaller than a dataset
(D) They are the same

Correct Answer: A

Explanation: A dataset is a structured collection of data, while a database is an organized collection of data stored in multiple datasets or.

35. Which of the following is a benefit of Big Data?

(A) Increased costs
(B) Better decision-making
(C) Slower processing
(D) Reduced storage

Correct Answer: B

Explanation: Big Data enables better decision-making by providing insights from large volumes of data.

36. A hospital collects data on patient temperatures: 98.6°F, 99.2°F, 100.1°F. What type of data is this?

(A) Discrete Data
(B) Nominal Data
(C) Continuous Data
(D) Ordinal Data

Correct Answer: C

Explanation: Temperature is continuous data because it can take any value within a range.

37. A survey asks respondents to rate a product on a scale of 1 to 5 (1 = Poor, 5 = Excellent). What type of data is this?

(A) Nominal Data
(B) Discrete Data
(C) Continuous Data
(D) Ordinal Data

Correct Answer: D

Explanation: Ordinal Data — this correctly answers the question.

38. A company wants to analyze customer feedback from social media. Which data type is this?

(A) Unstructured Data
(B) Structured Data
(C) Discrete Data
(D) Interval Data

Correct Answer: A

Explanation: Social media feedback (tweets, comments) is unstructured data.

39. A researcher needs to find the average income of households in a city. What type of data is income?

(A) Nominal Data
(B) Continuous Data
(C) Ordinal Data
(D) Discrete Data

Correct Answer: B

Explanation: Income is continuous data because it can take any value within a range.

40. A dataset contains the number of employees in different departments: 10, 15, 8, 12. What type of data is this?

(A) Continuous Data
(B) Nominal Data
(C) Discrete Data
(D) Ordinal Data

Correct Answer: C

Explanation: The number of employees is discrete data (coun.

41. A company wants to predict which customers are likely to churn (leave). What data science technique should they use?

(A) Data Visualization
(B) Data Mining
(C) Descriptive Analysis
(D) Predictive Analysis

Correct Answer: D

Explanation: Predictive analysis is used to predict future events like customer churn.

42. A supermarket wants to determine the best placement for products on shelves. What type of data analysis would help?

(A) Predictive Analysis
(B) Descriptive Analysis
(C) Prescriptive Analysis
(D) Diagnostic Analysis

Correct Answer: A

Explanation: Predictive Analysis — this correctly answers the question.

43. A government agency collects census data every 10 years. What type of data source is this?

(A) Primary Data
(B) Secondary Data
(C) Tertiary Data
(D) Real-time Data

Correct Answer: B

Explanation: Census data is collected by the government and is a secondary data source for others.

44. A student wants to analyze the relationship between study hours and exam scores. What type of data are study hours and exam scores?

(A) Qualitative Data
(B) Nominal Data
(C) Quantitative Data
(D) Ordinal Data

Correct Answer: C

Explanation: Study hours and exam scores are quantitative (numerical) data.

45. A company uses MongoDB to store customer data in flexible document format. What type of database is this?

(A) Relational Database
(B) Hierarchical Database
(C) Network Database
(D) Non-Relational Database

Correct Answer: D

Explanation: MongoDB is a non-relational (NoSQL) database.

46. A school wants to analyze student performance. They collect data on marks, attendance, and study hours. Which of the following is qualitative data?

(A) Grades (A, B, C)
(B) Marks
(C) Attendance
(D) Study hours

Correct Answer: A

Explanation: Grades are ordinal (qualitative) data, while marks, attendance, and study hours are quantitative.

47. Explain how Big Data can help a hospital improve patient care.

(A) By storing patient records
(B) By predicting epidemic outbreaks and monitoring patients in real-time
(C) By designing hospital buildings
(D) By hiring more staff

Correct Answer: B

Explanation: "By predicting epidemic outbreaks and monitoring patients in real-time" is correct: it matches the idea asked in the question ("Explain how Big Data can help a hospital improve patient care"), while the other choices do not.

48. A company wants to analyze customer sentiment from online reviews. What data science technique should they use and why?

(A) Data Mining; it finds patterns
(B) Predictive Analysis; it predicts future trends
(C) Sentiment Analysis; it identifies positive, negative, or neutral sentiments
(D) Data Visualization; it creates charts

Correct Answer: C

Explanation: Sentiment Analysis; it identifies positive, negative, or neutral sentiments — this correctly answers the question.

49. Differentiate between structured and unstructured data with examples.

(A) Structured data is qualitative; unstructured data is quantitative
(B) Structured data is continuous; unstructured data is discrete
(C) They are the same
(D) Structured data is organized in tables (e.g., student records); unstructured data is not (e.g., tweets)

Correct Answer: D

Explanation: Structured data is organized in tables, while unstructured data (tweets, images, videos) is not organized in a predefined format.

50. Why is data cleaning important before analysis? Explain with an example.

(A) It removes errors and ensures accurate analysis; e.g., removing duplicate customer records
(B) It stores data in databases; e.g., creating tables
(C) It visualizes data; e.g., creating charts
(D) It deletes all data; e.g., clearing the database

Correct Answer: A

Explanation: Data cleaning removes errors, duplicates, and inconsistencies, ensuring accurate analysis. For example, removing duplicate customer records prevents counting the same customer twice.

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Computer Science Grade 9 — Chapter 5

Applications of Computer Science

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is Artificial Intelligence (AI)?

(A) A branch of computer science that makes machines perform human-like tasks
(B) A type of hardware
(C) A programming language
(D) A network protocol

Correct Answer: A

Explanation: AI is a branch of computer science to make computer-controlled machines that can intelligently perform human-like tasks.

2. What is Machine Learning (ML)?

(A) A type of computer virus
(B) A field within AI that teaches computers to learn from data
(C) A hardware component
(D) A network topology

Correct Answer: B

Explanation: Machine learning is a field within Artificial Intelligence that teaches computers to learn from data inputs and experience like humans without direct programming.

3. Which type of machine learning uses labeled data?

(A) Unsupervised Learning
(B) Reinforcement Learning
(C) Supervised Learning
(D) Deep Learning

Correct Answer: C

Explanation: Supervised Learning — this correctly answers the question.

4. What is the primary goal of the fifth generation of computers?

(A) Faster speed
(B) Enhanced memory
(C) Smaller size
(D) Artificial Intelligence and Natural Language Processing

Correct Answer: D

Explanation: Artificial Intelligence and Natural Language Processing — this correctly answers the question.

5. Which AI area deals with understanding spoken and written words?

(A) Natural Language Processing (NLP)
(B) Computer Vision
(C) Robotics
(D) Expert Systems

Correct Answer: A

Explanation: NLP is about giving computers the ability to understand spoken and written words just like we do.

6. What is the purpose of an expert system?

(A) To play games
(B) To solve complex problems using knowledge and reasoning

(C) To browse the internet
(D) To store data

Correct Answer: B

Explanation: An expert system is an interactive AI-based computer program designed to solve complex problems using knowledge and reasoning.

7. Which cloud computing model is owned and operated by a cloud service provider?

(A) Private Cloud
(B) Hybrid Cloud
(C) Public Cloud
(D) Personal Cloud

Correct Answer: C

Explanation: In the public cloud model, resources are owned and operated by a cloud service provider.

8. What does the term "Chatbot" refer to?

(A) A robot that cleans
(B) A type of hardware
(C) A programming language
(D) A computer program that combines AI with natural language to answer questions

Correct Answer: D

Explanation: A chatbot is a computer program that combines AI with natural language to provide instant answers to website visitors' questions.

9. Which of the following is an application of AI in healthcare?

(A) Diagnosing diseases like cancer
(B) Playing music
(C) Editing photos
(D) Sending emails

Correct Answer: A

Explanation: AI-based software is fed into machines used in hospitals to help in diagnosis of diseases such as cancer.

10. What is the primary characteristic of self-driving cars?

(A) They only work at night
(B) They use AI software, sensors, cameras, and radars
(C) They require a driver at all times
(D) They cannot detect obstacles

Correct Answer: B

Explanation: Self-driving cars use AI software connected with devices such as sensors, cameras, and radars to travel without a driver.

11. Which type of machine learning is used when the goal is to group customers with similar buying habits without predefined labels?

(A) Supervised Learning
(B) Reinforcement Learning
(C) Unsupervised Learning
(D) Deep Learning

Correct Answer: C

Explanation: Unsupervised learning uses unlabeled data to find hidden patterns through clustering.

12. Which cloud computing model is dedicated to a single organization and provides more control?

(A) Public Cloud
(B) Hybrid Cloud
(C) Community Cloud
(D) Private Cloud

Correct Answer: D

Explanation: In the private cloud model, resources are owned by and used inside a single organization.

13. A self-driving car uses sensors and cameras to navigate. Which AI area does this primarily rely on?

(A) Computer Vision
(B) NLP
(C) Expert Systems
(D) Speech Recognition

Correct Answer: A

Explanation: Computer vision enables computer systems to obtain meaningful information from digital images and videos.

14. A company uses AI to analyze customer reviews and determine if they are positive, negative, or neutral. What is this technique called?

(A) Data Mining
(B) Sentiment Analysis
(C) Predictive Analysis
(D) Data Visualization

Correct Answer: B

Explanation: Sentiment Analysis — this correctly answers the question.

15. Which of the following is a benefit of cloud computing?

(A) High upfront infrastructure costs
(B) Limited scalability
(C) Cost efficiency and scalability
(D) Requires physical servers on-site

Correct Answer: C

Explanation: Cost efficiency and scalability — this correctly answers the question.

16. A doctor uses an AI system that asks questions and provides a diagnosis based on rules and knowledge. What type of AI system is this?

(A) Chatbot
(B) Virtual Assistant
(C) Self-driving Car
(D) Expert System

Correct Answer: D

Explanation: Expert System — this correctly answers the question.

17. Which AI tool is used for correcting spelling and grammar mistakes in documents?

(A) Grammarly
(B) ChatGPT
(C) Lovo ai
(D) Google Assistant

Correct Answer: A

Explanation: Grammarly is an AI tool for correcting spelling and grammar mistakes in documents.

18. What is the primary purpose of Natural Language Processing (NLP)?

(A) To understand images
(B) To enable easy communication between computers and humans using natural language
(C) To control robots
(D) To store data

Correct Answer: B

Explanation: The purpose of NLP is to provide easy communication between computers and humans by using natural language.

19. Which of the following is an application of AI in agriculture?

(A) Playing music

(B) Editing photos
(C) Scanning images of insects to detect disease
(D) Sending emails

Correct Answer: C

Explanation: AI is used for scanning images of insects that attack crops and livestock to detect and prevent spread of disease.

20. Which cloud computing model is a combination of public and private cloud?

(A) Public Cloud
(B) Private Cloud
(C) Community Cloud
(D) Hybrid Cloud

Correct Answer: D

Explanation: Hybrid cloud is a combination of public and private cloud.

21. A bank wants to detect fraudulent transactions in real-time. Which AI technique should they use?

(A) Machine Learning
(B) Natural Language Processing
(C) Computer Vision
(D) Speech Recognition

Correct Answer: A

Explanation: Machine Learning is used to detect fraud in banking transactions by recognizing patterns.

22. A hospital wants to analyze X-ray images to detect tumors. Which AI area is most suitable?

(A) NLP
(B) Computer Vision
(C) Expert Systems
(D) Robotics

Correct Answer: B

Explanation: Computer Vision — this correctly answers the question.

23. A company wants to build a chatbot that can answer customer questions. Which AI area is essential?

(A) Computer Vision
(B) Robotics
(C) Natural Language Processing
(D) Speech Recognition

Correct Answer: C

Explanation: Natural Language Processing — this correctly answers the question.

24. Which type of machine learning is used to predict car prices based on features like engine type and number of seats?

(A) Unsupervised Learning
(B) Reinforcement Learning
(C) Deep Learning
(D) Supervised Learning

Correct Answer: D

Explanation: Supervised learning uses labeled data (known input and output) to predict car prices.

25. What is the primary benefit of cloud computing for businesses?

(A) Scalability and cost efficiency
(B) High upfront costs
(C) Limited accessibility
(D) Requires on-site servers

Correct Answer: A

Explanation: Scalability and cost efficiency — this correctly answers the question.

B. Less Important / Secondary Topics

26. What is the difference between supervised and unsupervised learning?

(A) Supervised uses labeled data; unsupervised uses unlabeled data
(B) Supervised uses unlabeled data; unsupervised uses labeled data
(C) Both use labeled data
(D) Both use unlabeled data

Correct Answer: A

Explanation: Supervised learning uses labeled data (known input and output), while unsupervised learning uses unlabeled data.

27. Which of the following is a feature of the fifth generation of computers?

(A) Use of vacuum tubes
(B) Capable of learning, reasoning, and solving problems autonomously
(C) Use of transistors
(D) Use of integrated circuits

Correct Answer: B

Explanation: Fifth-generation computers are capable of learning, reasoning, and solving problems autonomously.

28. What is the purpose of the `prompt()` function in JavaScript?

(A) To display an alert box
(B) To change the background color
(C) To take user input
(D) To create a loop

Correct Answer: C

Explanation: The `prompt()` function pops up a message window that takes input from the user.

29. Which of the following is a characteristic of supervised learning?

(A) Finds hidden patterns
(B) Uses clustering
(C) No predefined categories
(D) Uses labeled data

Correct Answer: D

Explanation: Supervised learning uses labeled data (known input and output) to build a model.

30. What is the primary goal of cloud computing?

(A) To deliver computing services over the Internet
(B) To store data locally
(C) To increase hardware costs
(D) To reduce accessibility

Correct Answer: A

Explanation: Cloud computing refers to the delivery of computing services over the Internet.

31. A company wants to use AI to recommend products to customers based on their browsing and purchase history. Which AI application is this?

(A) Chatbot
(B) Recommendation System
(C) Self-driving Car
(D) Expert System

Correct Answer: B

Explanation: Recommendation System — this correctly answers the question.

32. Which of the following is an example of unsupervised learning?

(A) Predicting car prices

(B) Classifying emails as spam or not spam
(C) Grouping customers with similar buying habits
(D) Recognizing handwritten digits

Correct Answer: C

Explanation: Unsupervised learning uses clustering to group data without predefined labels.

33. What is the primary purpose of an expert system?

(A) To play games
(B) To browse the internet
(C) To store data
(D) To solve complex problems using knowledge and reasoning

Correct Answer: D

Explanation: An expert system is an interactive AI-based computer program designed to solve complex problems using knowledge and reasoning.

34. Which AI area is used in self-driving cars to detect obstacles?

(A) Computer Vision
(B) Natural Language Processing
(C) Speech Recognition
(D) Expert Systems

Correct Answer: A

Explanation: Computer Vision — this correctly answers the question.

35. What is the main advantage of cloud computing for data storage?

(A) Limited storage capacity
(B) Scalable and accessible from anywhere
(C) High upfront costs
(D) Requires physical servers on-site

Correct Answer: B

Explanation: Cloud computing offers scalable storage that is accessible from anywhere with an internet connection.

36. A hospital wants to use AI to improve patient care. Which of the following is an AI application in healthcare?

(A) Playing music
(B) Editing photos
(C) Diagnosing diseases like cancer
(D) Sending emails

Correct Answer: C

Explanation: AI is used in healthcare to diagnose diseases like cancer at an early stage.

37. A farmer wants to use AI to improve crop production. Which AI application is most suitable?

(A) Playing music
(B) Editing photos
(C) Sending emails
(D) Scanning images of insects to detect disease

Correct Answer: D

Explanation: AI scans images of insects that attack crops to detect and prevent disease.

38. A company wants to reduce its IT infrastructure costs and scale resources up or down based on demand. Which cloud computing model should they choose?

(A) Public Cloud
(B) Private Cloud
(C) Hybrid Cloud
(D) Personal Cloud

Correct Answer: A

Explanation: Public Cloud — this correctly answers the question.

39. A student wants to build a chatbot for their school website. Which AI technology enables the chatbot to understand user questions?

(A) Computer Vision
(B) Natural Language Processing
(C) Robotics
(D) Expert Systems

Correct Answer: B

Explanation: Natural Language Processing — this correctly answers the question.

40. Which of the following best describes the difference between AI and Machine Learning?

(A) AI is a subset of ML
(B) They are the same thing
(C) ML is a subset of AI
(D) AI and ML are unrelated

Correct Answer: C

Explanation: Machine Learning is a field within Artificial Intelligence.

41. A company wants to analyze customer reviews to determine if they are positive, negative, or neutral. Which AI technique should they use?

(A) Data Mining
(B) Predictive Analysis
(C) Data Visualization
(D) Sentiment Analysis

Correct Answer: D

Explanation: Sentiment Analysis — this correctly answers the question.

42. Which of the following is a challenge of AI?

(A) All of the above
(B) Bias in algorithms
(C) Job losses due to automation
(D) Lack of transparency

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

43. A company wants to use AI to detect fraudulent transactions. Which type of machine learning is most suitable?

(A) Unsupervised Learning
(B) Supervised Learning
(C) Reinforcement Learning
(D) Deep Learning

Correct Answer: B

Explanation: Supervised learning uses labeled data (fraudulent vs. legitimate) to build a fraud detection model.

44. Which of the following is an ethical issue associated with ChatGPT?

(A) Misinformation
(B) Cheating and plagiarism
(C) All of the above
(D) Data privacy

Correct Answer: C

Explanation: All of the above — this correctly answers the question.

45. What is the primary benefit of cloud computing for a small business?

(A) High upfront costs
(B) Limited accessibility

(C) Requires on-site servers
(D) Cost efficiency and scalability

Correct Answer: D

Explanation: Cloud computing offers cost efficiency, scalability, and accessibility for small businesses.

46. A company wants to use AI to recommend products to customers based on their purchase history. Which AI application is this?

(A) Recommendation System
(B) Chatbot
(C) Self-driving Car
(D) Expert System

Correct Answer: A

Explanation: Recommendation System — this correctly answers the question.

47. Which of the following is a characteristic of the fifth generation of computers?

(A) Use of vacuum tubes
(B) Focus on AI and NLP
(C) Use of transistors
(D) Use of integrated circuits

Correct Answer: B

Explanation: Focus on AI and NLP — this correctly answers the question.

48. A company wants to use AI to analyze customer feedback from social media. Which AI technique is most suitable?

(A) Computer Vision
(B) Speech Recognition
(C) Natural Language Processing
(D) Robotics

Correct Answer: C

Explanation: NLP is used to analyze text data like social media feedback.

49. Which of the following is a benefit of AI in healthcare?

(A) Early diagnosis of diseases
(B) Reduced hospital visits
(C) Personalized patient care
(D) All of the above

Correct Answer: D

Explanation: All of the above — this correctly answers the question.

50. A company wants to use AI to detect spam emails. Which type of machine learning is most suitable?

(A) Supervised Learning
(B) Unsupervised Learning
(C) Reinforcement Learning
(D) Deep Learning

Correct Answer: A

Explanation: Supervised learning uses labeled data (spam vs. not spam) to build a spam detection model.

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Computer Science Grade 9 — Chapter 6

Impacts of Computing

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is the main focus of computer safety?

(A) Safeguarding hardware and software components
(B) Increasing computer speed
(C) Installing new software
(D) Upgrading hardware

Correct Answer: A

Explanation: The main focus of computer safety is safeguarding a computer system's hardware and software components.

2. Why is it important to keep your system updated?

(A) To get new features only
(B) To protect against security flaws
(C) To increase screen brightness
(D) To change the wallpaper

Correct Answer: B

Explanation: Updates frequently include important security fixes that protect the computer system from flaws.

3. What is a strong password?

(A) Your name and birthday
(B) A single word
(C) A mix of letters, numbers, and special characters
(D) Your phone number

Correct Answer: C

Explanation: A good password is a mix of letters (both capital and lowercase), numbers, and special characters.

4. What is phishing?

(A) A type of fishing
(B) A software update
(C) A hardware component
(D) Attempting to trick individuals into revealing sensitive information

Correct Answer: D

Explanation: Phishing is attempting to trick individuals into revealing sensitive information, often through fake emails or websites.

5. Why should you avoid using public Wi-Fi for online banking?

(A) It is more susceptible to hackers
(B) It is too slow
(C) It costs money
(D) It requires a password

Correct Answer: A

Explanation: Public Wi-Fi networks are more susceptible to hackers, so they should be avoided for private tasks like online banking.

6. What is malware?

(A) A type of hardware

(B) Malicious software designed to harm or exploit computers
(C) A programming language
(D) A network protocol

Correct Answer: B

Explanation: Malware is malicious software designed to harm or exploit computers or networks.

7. What does the term "spyware" refer to?

(A) A type of antivirus
(B) A web browser
(C) Software that secretly collects user information
(D) A hardware component

Correct Answer: C

Explanation: Spyware is software that secretly collects user information without their knowledge or consent.

8. What is software piracy?

(A) Using free software
(B) Updating software
(C) Installing software
(D) Unauthorized copying or use of software

Correct Answer: D

Explanation: Software piracy is unauthorized copying, distribution, or use of software without proper licensing.

9. What is information privacy?

(A) Keeping personal information safe from unauthorized access
(B) Sharing personal information publicly
(C) Deleting all files
(D) Using public Wi-Fi

Correct Answer: A

Explanation: Information privacy means keeping personal information safe and not letting unauthorized people access it.

10. What is disinformation?

(A) True information
(B) False or misleading information deliberately spread to deceive
(C) A type of software
(D) A hardware component

Correct Answer: B

Explanation: Disinformation is false or misleading information that is deliberately spread to deceive people.

11. What is a cookie in the context of computing?

(A) A type of malware
(B) A hardware component
(C) A small text file stored on a user's device
(D) A programming language

Correct Answer: C

Explanation: Cookies are small text files stored on a user's device, containing information about their interactions with a website.

12. Which of the following is an example of freeware?

(A) Microsoft Word
(B) Adobe Photoshop
(C) WinRAR
(D) Mozilla Firefox

Correct Answer: D

Explanation: Freeware is software that is free to use without any payment. Mozilla Firefox is an example.

13. What is a patent?

(A) A legal document that grants exclusive rights to an invention
(B) A type of software
(C) A network protocol
(D) A hardware component

Correct Answer: A

Explanation: A patent is a legal document that grants its holder the exclusive right to make, use, and sell an invention for a specified period.

14. What is a trademark?

(A) A type of malware
(B) A recognizable sign, design, or expression that distinguishes products
(C) A software license
(D) A hardware component

Correct Answer: B

Explanation: A trademark is a recognizable sign, design, or expression that distinguishes products or services of a particular source from those of others.

15. What is copyright?

(A) A type of malware
(B) A software license
(C) A legal right granting the creator exclusive rights to use and distribute an original work
(D) A hardware component

Correct Answer: C

Explanation: Copyright is a legal right that grants the creator of an original work exclusive rights to its use and distribution.

16. A user receives an email claiming to be from their bank asking for login credentials. What type of attack is this?

(A) Hacking
(B) Spamming
(C) Pharming
(D) Phishing

Correct Answer: D

Explanation: Phishing — this correctly answers the question.

17. A student downloads a cracked version of a paid software. What is this an example of?

(A) Software Piracy
(B) Freeware
(C) Shareware
(D) Open Source

Correct Answer: A

Explanation: Downloading cracked software is an example of software piracy.

18. Which of the following is an example of freeware?

(A) Microsoft Word
(B) Mozilla Firefox
(C) Adobe Photoshop
(D) WinRAR

Correct Answer: B

Explanation: Mozilla Firefox is free to use without payment (freeware).

19. A user wants to try a software before purchasing it. What type of software distribution is this?

(A) Freeware
(B) Commercial Software

(C) Shareware
(D) Open Source

Correct Answer: C

Explanation: Shareware is distributed on a trial basis with the option to purchase for full functionality.

20. What is the primary purpose of a cookie?

(A) To harm the computer
(B) To spread malware
(C) To hack accounts
(D) To store user preferences and login information

Correct Answer: D

Explanation: Cookies store user preferences and login information for a more personalized user experience.

21. Which of the following is a harmful effect of computing innovation?

(A) Privacy concerns
(B) Increased productivity
(C) Improved communication
(D) Medical advancements

Correct Answer: A

Explanation: Privacy concerns are a harmful effect of computing innovation.

22. What is the primary goal of system security?

(A) To make systems faster
(B) To ensure confidentiality, integrity, and availability
(C) To increase storage capacity
(D) To improve graphics

Correct Answer: B

Explanation: To ensure confidentiality, integrity, and availability — this correctly answers the question.

23. What is the difference between disinformation and fake news?

(A) They are the same
(B) Fake news is deliberate; disinformation is not
(C) Disinformation is deliberate; fake news may not be
(D) Neither is harmful

Correct Answer: C

Explanation: Disinformation is deliberately spread to deceive, while fake news may not be intended to harm.

24. Which of the following is a safe practice for social networking?

(A) Sharing all personal information publicly
(B) Accepting all friend requests
(C) Sharing financial information
(D) Adjusting privacy settings

Correct Answer: D

Explanation: Adjusting privacy settings is a safe practice for social networking.

25. What is the purpose of a patent?

(A) To protect inventions
(B) To protect brand names
(C) To protect original works
(D) To protect personal data

Correct Answer: A

Explanation: A patent protects inventions for a specified period (usually 20 years).

B. Less Important / Secondary Topics

26. Which of the following is a type of malware?

(A) All of the above
(B) Virus
(C) Ransomware
(D) Trojan horse

Correct Answer: A

Explanation: All of the above — this correctly answers the question.

27. What is the purpose of a backup?

(A) To increase computer speed
(B) To protect against data loss
(C) To install new software
(D) To change the wallpaper

Correct Answer: B

Explanation: Backups ensure that data is not lost if the computer stops working or is damaged.

28. What is pharming?

(A) A type of fishing
(B) A software update
(C) Redirecting website traffic to a fake site
(D) A hardware component

Correct Answer: C

Explanation: Pharming is redirecting website traffic to a fake site without the user's knowledge.

29. Which of the following is an example of shareware?

(A) Mozilla Firefox
(B) Microsoft Word
(C) Adobe Photoshop
(D) WinRAR

Correct Answer: D

Explanation: WinRAR is a file compression tool with a free trial period (shareware).

30. What is the purpose of a copyright?

(A) To protect original works
(B) To protect inventions
(C) To protect brand names
(D) To protect personal data

Correct Answer: A

Explanation: Copyright protects original works (books, music, art, software) for the author's life plus 50–70 years.

31. Which of the following is a characteristic of a strong password?

(A) Using the same password for all accounts
(B) A mix of letters, numbers, and special characters
(C) Using your name
(D) Using your birthday

Correct Answer: B

Explanation: A mix of letters, numbers, and special characters — this correctly answers the question.

32. What is the primary purpose of encryption?

(A) To increase computer speed
(B) To install new software
(C) To protect data from unauthorized access
(D) To change the wallpaper

Correct Answer: C

Explanation: Encryption is used to safeguard sensitive data from unauthorized access.

33. Which of the following is a safe practice for online shopping?

(A) Sharing personal details freely
(B) Using public Wi-Fi for banking
(C) Clicking on all links
(D) Using websites with HTTPS and a padlock symbol

Correct Answer: D

Explanation: Safe online shopping requires using secure websites with HTTPS and a padlock symbol.

34. What is the difference between a patent and a copyright?

(A) Patent protects inventions; copyright protects original works
(B) Patent protects original works; copyright protects inventions
(C) Both protect inventions
(D) Both protect original works

Correct Answer: A

Explanation: Patent protects inventions; copyright protects original works — this correctly answers the question.

35. What is the purpose of a trademark?

(A) To protect inventions
(B) To protect brand names and logos
(C) To protect original works
(D) To protect personal data

Correct Answer: B

Explanation: A trademark protects brand names, logos, and symbols that distinguish products or services.

36. A company wants to protect its sensitive data while allowing employees to access it easily. What trade-off are they dealing with?

(A) Speed vs. Storage
(B) Hardware vs. Software
(C) Privacy/Security vs. Usability
(D) Wired vs. Wireless

Correct Answer: C

Explanation: There is often a trade-off between privacy/security and usability. Stronger security may reduce usability.

37. A user receives an email claiming they won a lottery and asking for bank details. What type of threat is this?

(A) Phishing
(B) Spam
(C) Hacking
(D) Scam

Correct Answer: D

Explanation: A lottery win email asking for bank details is a scam (deceptive scheme for financial gain).

38. A student wants to use a software for a trial period before purchasing it. What type of software should they look for?

(A) Shareware
(B) Freeware
(C) Commercial Software
(D) Open Source

Correct Answer: A

Explanation: Shareware is distributed on a trial basis with the option to purchase.

39. A company wants to ensure that its software is legally used and licensed. What should they implement?

(A) Software Piracy
(B) Proper Licensing

(C) Freeware
(D) Shareware

Correct Answer: B

Explanation: Proper licensing ensures software is used legally and in compliance with licensing terms.

40. A user notices that their online activities are being tracked and data is sent to advertisers. What type of malware is this?

(A) Virus
(B) Ransomware
(C) Spyware
(D) Trojan Horse

Correct Answer: C

Explanation: Spyware — this correctly answers the question.

41. A social media platform wants to reduce the spread of fake news. What should they implement?

(A) Ignore the problem
(B) Encourage sharing
(C) Remove privacy settings
(D) Fact-checking programs

Correct Answer: D

Explanation: Fact-checking programs — this correctly answers the question.

42. A government wants to protect its citizens' personal data. What type of laws should they implement?

(A) Privacy Laws
(B) Patent Laws
(C) Trademark Laws
(D) Copyright Laws

Correct Answer: A

Explanation: Privacy laws protect citizens' personal data from unauthorized access and misuse.

43. A company develops a new invention. What type of intellectual property protection should they apply for?

(A) Copyright
(B) Patent
(C) Trademark
(D) Trade Secret

Correct Answer: B

Explanation: A patent protects inventions for a specified period (usually 20 years).

44. A company wants to protect its brand name and logo. What type of intellectual property protection should they use?

(A) Patent
(B) Copyright
(C) Trademark
(D) Trade Secret

Correct Answer: C

Explanation: Trademark — this correctly answers the question.

45. A user wants to ensure their data is safe when using public Wi-Fi. What should they use?

(A) A stronger antenna
(B) A larger screen
(C) A faster processor
(D) A VPN

Correct Answer: D

Explanation: A VPN encrypts the Wi-Fi connection for security.

46. A company wants to implement responsible hardware and software use. Which of the following is a responsible hardware practice?

(A) Extending device lifespan
(B) Ignoring software updates
(C) Using hardware for illegal activities
(D) Upgrading unnecessarily

Correct Answer: A

Explanation: Extending device lifespan reduces e-waste and is a responsible hardware practice.

47. Which of the following is a responsible software practice?

(A) Using software for hacking
(B) Observing the law and respecting licenses
(C) Spreading malware
(D) Cyberbullying

Correct Answer: B

Explanation: Observing the law and respecting licenses — this correctly answers the question.

48. A user wants to protect their computer from malware. Which of the following is a recommended practice?

(A) Downloading from untrusted websites
(B) Disabling antivirus software
(C) Keeping the system updated
(D) Clicking on all links

Correct Answer: C

Explanation: Keeping the system updated — this correctly answers the question.

49. Which of the following is an example of a patent violation?

(A) Copying a book without permission
(B) Using a brand name without permission
(C) Sharing personal data
(D) Making and selling an invention without the patent holder's permission

Correct Answer: D

Explanation: Making and selling an invention without the patent holder's permission — this correctly answers the question.

50. Which of the following is an example of a copyright violation?

(A) Reproducing a book without the author's permission
(B) Making and selling an invention without permission
(C) Using a brand name without permission
(D) Sharing personal data

Correct Answer: A

Explanation: Reproducing a book without the author's permission — this correctly answers the question.

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Computer Science Grade 9 — Chapter 7

Entrepreneurship

by Public Library

Independent practice MCQs from the supplied Class 9 Computer Science notes pack. Total: 50 questions. Each item has four options, the correct letter, and a short explanation.

A. Important / Main Topics

1. What is entrepreneurship?

(A) The process of creating an enterprise
(B) Working for a company
(C) Investing in stocks
(D) A type of software

Correct Answer: A

Explanation: Entrepreneurship is the process of creating an enterprise, involving calculated risk-taking to achieve business objectives.

2. What is an entrepreneur?

(A) A person who works for a boss
(B) A person who starts or owns a business, taking financial risks for profit
(C) A person who only invests money
(D) A person who manages government projects

Correct Answer: B

Explanation: An entrepreneur starts or owns a business, organizes and manages it, taking on financial risks for the sake of profit.

3. Which of the following is a characteristic of a successful entrepreneur?

(A) Avoiding all risks
(B) Waiting for instructions
(C) Desire for responsibility
(D) Depending on others

Correct Answer: C

Explanation: Entrepreneurs feel a deep sense of personal responsibility for the outcome of ventures they start.

4. What is design thinking?

(A) A type of software
(B) A financial strategy
(C) A marketing technique
(D) A human-centered approach to problem-solving

Correct Answer: D

Explanation: Design thinking is an iterative and non-linear process that is a human-centered approach to problem-solving.

5. Which is the first phase of design thinking?

(A) Empathize
(B) Define
(C) Ideate
(D) Prototype

Correct Answer: A

Explanation: The five phases of design thinking are Empathize, Define, Ideate, Prototype, and Test.

6. What is a business plan?

(A) A verbal agreement

(B) A written summary of a proposed business venture
(C) A type of loan
(D) A government document

Correct Answer: B

Explanation: A written summary of a proposed business venture — this correctly answers the question.

7. What is the formula for setting the selling price?

(A) Cost of Production - Overheads - Profit
(B) Cost of Production × Overheads × Profit
(C) Cost of Production + Overheads + Profit
(D) Cost of Production ÷ Overheads ÷ Profit

Correct Answer: C

Explanation: Cost of Production + Overheads + Profit — this correctly answers the question.

8. Which of the following is a source of primary data?

(A) Government records
(B) Research papers
(C) Books
(D) Surveys and interviews

Correct Answer: D

Explanation: Primary data is collected directly by questionnaires, surveys, and interviews.

9. What is a market?

(A) The number of potential customers for a product or service
(B) A building where goods are sold
(C) A type of advertisement
(D) A financial institution

Correct Answer: A

Explanation: The number of customers in the community represents the market for a service or product.

10. What are SMART goals?

(A) Simple, Manageable, Achievable, Realistic, Timely
(B) Specific, Measurable, Achievable, Realistic, Time-Bound
(C) Strong, Meaningful, Actionable, Relevant, Tested
(D) Strategic, Motivated, Ambitious, Results, Team

Correct Answer: B

Explanation: SMART goals are Specific, Measurable, Achievable, Realistic, and Time-Bound.

11. What is the primary goal of a business plan?

(A) To decorate the office
(B) To hire employees
(C) To guide entrepreneurs and attract financing
(D) To design a logo

Correct Answer: C

Explanation: The primary goals of a business plan are to guide entrepreneurs and help them acquire financing.

12. What is profit?

(A) The total revenue
(B) The cost of production
(C) The overhead cost
(D) The difference between the cost price and selling price

Correct Answer: D

Explanation: Profit is the difference between the cost price and selling price.

13. What is the purpose of market analysis?

(A) To identify competitors and understand customer needs

(B) To decorate the office
(C) To hire employees
(D) To design a logo

Correct Answer: A

Explanation: To identify competitors and understand customer needs — this correctly answers the question.

14. Which of the following is a fixed cost?

(A) Raw materials
(B) Rent
(C) Packaging
(D) Labor per unit

Correct Answer: B

Explanation: Rent is a fixed cost that does not vary with production volume.

15. What is the purpose of a promotional strategy?

(A) To decorate the office
(B) To hire employees
(C) To create awareness and attract customers
(D) To design a logo

Correct Answer: C

Explanation: To create awareness and attract customers — this correctly answers the question.

16. A student wants to start a small business. What is the first step they should take?

(A) Borrow money from a bank
(B) Hire employees
(C) Rent a shop
(D) Identify a community need and assess their skills

Correct Answer: D

Explanation: The first step is to identify a community need and assess skills to match them with business opportunities.

17. Which software tool is specifically designed for business plans and comes pre-loaded with templates?

(A) LivePlan (Business Plan Pro)
(B) Microsoft Word
(C) Canva
(D) WordPress

Correct Answer: A

Explanation: LivePlan (Business Plan Pro) is specifically designed for business plans and comes with 500+ templates.

18. A company has a cost of production of Rs. 500, overheads of Rs. 100, and wants a profit of Rs. 200. What is the selling price?

(A) Rs. 600
(B) Rs. 800
(C) Rs. 700
(D) Rs. 900

Correct Answer: B

Explanation: Rs. 800 — this correctly answers the question.

19. Which phase of design thinking involves building a sample model to learn fast and cheap?

(A) Empathize
(B) Define
(C) Prototype
(D) Test

Correct Answer: C

Explanation: Prototype — this correctly answers the question.

20. Which characteristic of an entrepreneur means they are calculated risk-takers?

(A) Desire for responsibility
(B) Self-reliance
(C) Future orientation
(D) Preference for moderate risk

Correct Answer: D

Explanation: Entrepreneurs are calculated risk-takers, not wild risk-takers.

21. Which of the following is a key element of a business plan?

(A) Marketing strategy
(B) Employee lunch menu
(C) Office decoration
(D) Personal hobbies

Correct Answer: A

Explanation: Marketing strategy is a key element of a business plan.

22. Which of the following is NOT a component of the cost of production?

(A) Raw materials
(B) Profit
(C) Labor
(D) Packaging

Correct Answer: B

Explanation: Profit is not a component of cost of production; it is added separately to determine the selling price.

23. What is the primary purpose of market analysis?

(A) To decorate the office
(B) To hire employees
(C) To identify competitors and understand customer needs
(D) To design a logo

Correct Answer: C

Explanation: To identify competitors and understand customer needs — this correctly answers the question.

24. Which of the following is a source of data mentioned in the chapter?

(A) Websites
(B) Surveys
(C) Sensors
(D) All of the above

Correct Answer: D

Explanation: Websites, surveys, and sensors are all data sources mentioned in the chapter.

25. What is the purpose of a survey in market analysis?

(A) To gather data about customer needs and preferences
(B) To decorate the office
(C) To hire employees
(D) To design a logo

Correct Answer: A

Explanation: To gather data about customer needs and preferences — this correctly answers the question.

B. Less Important / Secondary Topics

26. What is the difference between primary and secondary data?

(A) Primary data is collected firsthand; secondary data is from existing sources
(B) Primary data is cheaper; secondary data is expensive

(C) Primary data is always accurate; secondary data is always inaccurate
(D) Primary data is numerical; secondary data is textual

Correct Answer: A

Explanation: Primary data is collected directly, while secondary data is collected from existing sources.

27. A company wants to launch a new product. They analyze their strengths, weaknesses, opportunities, and threats. What technique are they using?

(A) SMART Goals
(B) SWOT Analysis
(C) IPO Model
(D) Design Thinking

Correct Answer: B

Explanation: SWOT Analysis — this correctly answers the question.

28. An entrepreneur sets a goal to "increase sales by 20% in the next 6 months." Which SMART criterion does "in the next 6 months" represent?

(A) Specific
(B) Measurable
(C) Time-Bound
(D) Achievable

Correct Answer: C

Explanation: Time-Bound — this correctly answers the question.

29. A company wants to promote its product to young adults aged 18–25. What is this group called?

(A) Competitors
(B) Suppliers
(C) Employees
(D) Target Market

Correct Answer: D

Explanation: The target market is the specific group of customers a business wants to reach.

30. A business calculates that its total cost per unit is Rs. 50 and wants a 40% profit margin. What should be the selling price?

(A) Rs. 70
(B) Rs. 60
(C) Rs. 80
(D) Rs. 90

Correct Answer: A

Explanation: Rs. 70 — this correctly answers the question.

31. What is the purpose of the executive summary in a business plan?

(A) To list all employees
(B) To condense the entire business plan and provide an overview
(C) To provide a detailed financial report
(D) To describe the office layout

Correct Answer: B

Explanation: To condense the entire business plan and provide an overview — this correctly answers the question.

32. Which of the following is a fixed cost?

(A) Raw materials
(B) Packaging
(C) Rent
(D) Labor per unit

Correct Answer: C

Explanation: Rent is a fixed cost that does not vary with production volume.

33. What is the difference between cost of production and overheads?

(A) Cost of production is indirect costs; overheads are direct costs
(B) Both are the same
(C) Neither is a cost
(D) Cost of production is direct costs; overheads are indirect costs

Correct Answer: D

Explanation: Cost of production is direct costs; overheads are indirect costs — this correctly answers the question.

34. A company wants to determine if their product is sustainable in the market. What question should they ask in their survey?

(A) Will customers buy the product regularly or seasonally?
(B) What is the weather today?
(C) How many employees do we have?
(D) What is the color of our logo?

Correct Answer: A

Explanation: Will customers buy the product regularly or seasonally? — this correctly answers the question.

35. What is the purpose of a trademark?

(A) To protect inventions
(B) To protect brand names and logos
(C) To protect original works
(D) To protect personal data

Correct Answer: B

Explanation: A trademark protects brand names, logos, and symbols that distinguish products or services.

36. A student wants to start a small business selling homemade crafts. What is the first step they should take?

(A) Borrow money from a bank
(B) Hire employees
(C) Identify a community need and assess their skills
(D) Rent a shop

Correct Answer: C

Explanation: The first step is to identify a community need and assess skills.

37. An entrepreneur identifies that their community lacks affordable tutoring services. They decide to start a tutoring center. What type of business idea is this?

(A) Product-based
(B) Manufacturing
(C) Export
(D) Service-based

Correct Answer: D

Explanation: Service-based — this correctly answers the question.

38. A company wants to determine how many potential customers are interested in their product. What should they conduct?

(A) A survey
(B) A protest
(C) A party
(D) A meeting

Correct Answer: A

Explanation: A survey is conducted to determine potential customer interest.

39. A business sells a product for Rs. 100. The cost of production is Rs. 60, overheads are Rs. 10, and profit is Rs. 30. Which component is the profit?

(A) Rs. 60

(B) Rs. 30
(C) Rs. 10
(D) Rs. 100

Correct Answer: B

Explanation: Profit is Rs. 30 (Selling Price - Cost - Overheads = Profit).

40. A company wants to launch a new product. They analyze their strengths, weaknesses, opportunities, and threats. What technique are they using?

(A) SMART Goals
(B) IPO Model
(C) SWOT Analysis
(D) Design Thinking

Correct Answer: C

Explanation: SWOT Analysis — this correctly answers the question.

41. An entrepreneur sets a goal to "increase sales by 20% in the next 6 months." Which SMART criterion does "in the next 6 months" represent?

(A) Specific
(B) Measurable
(C) Achievable
(D) Time-Bound

Correct Answer: D

Explanation: Time-Bound — this correctly answers the question.

42. A company wants to promote its product to young adults aged 18–25. What is this group called?

(A) Target Market
(B) Competitors
(C) Suppliers
(D) Employees

Correct Answer: A

Explanation: The target market is the specific group of customers a business wants to reach.

43. A business calculates that its total cost per unit is Rs. 50 and wants a 40% profit margin. What should be the selling price?

(A) Rs. 60
(B) Rs. 70
(C) Rs. 80
(D) Rs. 90

Correct Answer: B

Explanation: Rs. 70 — this correctly answers the question.

44. A student wants to create a business plan for their startup. Which software tool is specifically designed for business plans and comes pre-loaded with templates?

(A) Microsoft Word
(B) Canva
(C) LivePlan (Business Plan Pro)
(D) WordPress

Correct Answer: C

Explanation: LivePlan (Business Plan Pro) is specifically designed for business plans.

45. A company wants to determine if their product is sustainable in the market. What question should they ask in their survey?

(A) What is the weather today?
(B) How many employees do we have?
(C) What is the color of our logo?

(D) Will customers buy the product regularly or seasonally?

Correct Answer: D

Explanation: Will customers buy the product regularly or seasonally? — this correctly answers the question.

46. A company has a cost of production of Rs. 500, overheads of Rs. 100, and wants a profit of Rs. 200. Calculate the selling price.

(A) Rs. 800
(B) Rs. 600
(C) Rs. 700
(D) Rs. 900

Correct Answer: A

Explanation: "Rs. 800" is correct: it matches the idea asked in the question ("A company has a cost of production of Rs. 500, overheads of Rs. 100, and wants a profit of Rs. 200. Calculate the selling price"), while the other choices do not.

47. Which of the following is a characteristic of a successful entrepreneur?

(A) Avoiding all risks
(B) Desire for responsibility
(C) Waiting for instructions
(D) Depending on others

Correct Answer: B

Explanation: Entrepreneurs feel a deep sense of personal responsibility for the outcome of ventures they start.

48. What is the primary goal of a business plan?

(A) To decorate the office
(B) To hire employees
(C) To guide entrepreneurs and attract financing
(D) To design a logo

Correct Answer: C

Explanation: The primary goals of a business plan are to guide entrepreneurs and help them acquire financing.

49. Which of the following is a fixed cost?

(A) Raw materials
(B) Packaging
(C) Labor per unit
(D) Rent

Correct Answer: D

Explanation: Rent is a fixed cost that does not vary with production volume.

50. What is the purpose of a promotional strategy?

(A) To create awareness and attract customers
(B) To decorate the office
(C) To hire employees
(D) To design a logo

Correct Answer: A

Explanation: To create awareness and attract customers — this correctly answers the question.