CENTRAL BOARD OF SECONDARY EDUCATION

CBSE 2026-27

Artificial Intelligence

Subject Code: 417 | Class X

Question Bank – Set 2

Questions in this Booklet

Ch.	Chapter	MCQs	A-R	VSA	SA	LA	CS	All
1	Communication Skills – II	9	0	3	5	0	0	**17**
2	Self-Management Skills – II	9	0	3	5	0	0	**17**
3	Information and Communication Technology Skills – II	9	0	3	5	0	0	**17**
4	Entrepreneurial Skills – II	9	0	3	5	0	0	**17**
5	Green Skills – II	9	0	3	5	0	0	**17**
6	Revisiting AI Project Cycle & Ethical Frameworks for AI	12	3	4	5	2	2	**28**
7	Advanced Concepts of Modeling in AI	12	3	4	5	2	2	**28**
8	Evaluating Models	12	3	4	5	2	2	**28**
9	Computer Vision	12	3	4	5	2	2	**28**
10	Natural Language Processing	12	3	4	5	2	2	**28**
	Total	**105**	**15**	**35**	**50**	**10**	**10**	**225**

MCQs = Multiple Choice; A-R = Assertion–Reason; VSA = Very Short Answer; SA = Short Answer; LA = Long Answer; CS = Case Study / Source-based.

About this booklet: Chapters 1–5 = Part A Employability Skills; Chapters 6–10 = Part B Subject Specific Skills (theory-assessed units). Units 4 (Statistical Data) and 7 (Advance Python) are assessed through practicals only and are therefore not included. Marks: MCQ/A-R/VSA = 1, SA = 2, LA = 4, Case Study = 4. Questions tagged in grey come from CBSE Sample Papers / Board papers; the others are CBSE-pattern practice questions.

Contents

1. Communication Skills – II **4**
Multiple Choice Questions (MCQs) . . . 4
Very Short Answer (VSA) . . . 4
Short Answer (SA) . . . 4

2. Self-Management Skills – II **6**
Multiple Choice Questions (MCQs) . . . 6
Very Short Answer (VSA) . . . 6
Short Answer (SA) . . . 6

3. Information and Communication Technology Skills – II **8**
Multiple Choice Questions (MCQs) . . . 8
Very Short Answer (VSA) . . . 8
Short Answer (SA) . . . 8

4. Entrepreneurial Skills – II **9**
Multiple Choice Questions (MCQs) . . . 9
Very Short Answer (VSA) . . . 9
Short Answer (SA) . . . 10

5. Green Skills – II **11**
Multiple Choice Questions (MCQs) . . . 11
Very Short Answer (VSA) . . . 11
Short Answer (SA) . . . 12

6. Revisiting AI Project Cycle & Ethical Frameworks for AI **13**
Multiple Choice Questions (MCQs) . . . 13
Assertion–Reason . . . 14
Very Short Answer (VSA) . . . 14
Short Answer (SA) . . . 14
Long Answer (LA) . . . 15
Case Study . . . 15

7. Advanced Concepts of Modeling in AI **16**
Multiple Choice Questions (MCQs) . . . 16
Assertion–Reason . . . 17
Very Short Answer (VSA) . . . 17
Short Answer (SA) . . . 17
Long Answer (LA) . . . 18
Case Study . . . 18

8. Evaluating Models **19**
Multiple Choice Questions (MCQs) . . . 19
Assertion–Reason . . . 20

Very Short Answer (VSA) 20
Short Answer (SA) 20
Long Answer (LA) 21
Case Study 21

9. Computer Vision **22**
Multiple Choice Questions (MCQs) 22
Assertion–Reason 23
Very Short Answer (VSA) 23
Short Answer (SA) 23
Long Answer (LA) 23
Case Study 24

10. Natural Language Processing **25**
Multiple Choice Questions (MCQs) 25
Assertion–Reason 26
Very Short Answer (VSA) 26
Short Answer (SA) 26
Long Answer (LA) 27
Case Study 27

Answer Key (MCQs and Assertion–Reason) **28**

1. Communication Skills – II

Part A, Unit 1

Multiple Choice Questions (MCQs)

Q1. In the communication cycle, the response given by the receiver to the sender is called: **[1]**

(a) Encoding (b) Noise (c) Feedback (d) Channel

Q2. Which of the following is a barrier to effective communication? **[1]**

(a) Clear message (b) Timely feedback (c) Noise in the room (d) Active listening

Q3. Addressing a large audience, such as a speech at a school assembly, is called: **[1]**

(a) Interpersonal communication (b) Public communication
(c) Intrapersonal communication (d) Non-verbal communication

Q4. The predicate of a sentence contains: **[1]**

(a) Only the subject
(b) The verb and what is said about the subject
(c) Only the object
(d) The article

Q5. Personal differences and clashes in attitude between two co-workers create which barrier? **[1]**

(a) Interpersonal (b) Physical (c) Cultural (d) Linguistic

Q6. Which part of speech describes a noun? **[1]**

(a) Verb (b) Adverb (c) Adjective (d) Preposition

Q7. Which is an example of visual communication? **[1]**

(a) A pie chart in a sales report (b) A telephone call
(c) A song (d) A speech

Q8. Which measure helps overcome linguistic barriers? **[1]**

(a) Speak faster (b) Use technical jargon
(c) Avoid visuals (d) Use simple language and avoid jargon

Q9. Differences in customs, beliefs and traditions among team members can create which barrier? **[1]**

(a) Cultural barrier (b) Physical barrier
(c) Organisational barrier (d) Financial barrier

Very Short Answer (VSA)

Q10. A sentence that gives a command or request is called an _____ sentence. **[1]**

Q11. _____ is the final component in the process of communication as it defines the response given by the receiver to the sender. **[1]**

[SQP 2020-21; MS 2020-21]

Q12. True or False: 'Good work' is specific feedback that tells the receiver exactly what to improve. **[1]**

Short Answer (SA)

Q13. Identify the type of barrier in: 'Seema and Riya do not talk because of a long-standing personal dispute.' Explain it and suggest a way to resolve it. **[2]**

Q14. What is a pronoun? Give an example. **[2]**

[SQP 2025-26; MS 2025-26]

Q15. Name and discuss any two elements of a communication cycle. **[2]**

[Board 2025 Comptt]

Q16. Explain the importance of visual communication in a business presentation. **[2]**

Q17. What is a phrase? Give two examples of phrases used in sentences. **[2]**

2. Self-Management Skills – II

Part A, Unit 2

Multiple Choice Questions (MCQs)

Q1. You take ownership of a task, complete it sincerely, and report honestly even if it is delayed. Which skill does this describe? **[1]**

[SQP 2025-26; MS 2025-26]

(a) Self-awareness (b) Responsibility (c) Time management (d) Adaptability

Q2. Which of the following is NOT a suggested step to manage emotional intelligence? **[1]**

[SQP 2025-26; MS 2025-26]

(a) Observing your own behaviour to understand your emotions
(b) Practising meditation and yoga to stay calm
(c) Making decisions purely based on emotions
(d) Thinking rationally before making decisions

Q3. Working independently helps a person to: **[1]**
(a) Build self-confidence and decision-making ability
(b) Depend on others
(c) Avoid responsibility
(d) Avoid learning

Q4. Which is a sign of emotional intelligence in a team? **[1]**

(a) Listening to others' views before reacting (b) Shouting at colleagues
(c) Ignoring feedback (d) Blaming others

Q5. Which is an example of a self-motivated student? **[1]**
(a) Studies only when parents ask
(b) Copies others' work
(c) Prepares a study plan and works towards the exam goal
(d) Waits for holidays

Q6. Taking responsibility at the workplace means: **[1]**

(a) Doing only easy tasks (b) Blaming teammates
(c) Avoiding deadlines (d) Owning tasks and their outcomes

Q7. Setting SMART goals mainly helps to: **[1]**

(a) Make goals clear and trackable (b) Avoid goals
(c) Delay tasks (d) Copy others

Q8. A student divides a long project into daily tasks with deadlines. This shows: **[1]**

(a) Stress denial (b) Dependence (c) Impulsiveness (d) Goal setting

Q9. Setting priorities for tasks based on urgency and importance is part of: **[1]**

(a) Ignoring deadlines (b) Procrastinating (c) Prioritising (d) Avoiding planning

Very Short Answer (VSA)

Q10. The ability to control impulsive reactions and regulate one's behaviour is known as _____. **[1]**

Q11. Breaking a large task into smaller steps with deadlines is part of _____ management. **[1]**

Q12. A _____ is a long-term aim that a person plans to achieve. **[1]**

Short Answer (SA)

Q13. In SMART goals, what does 'A' stand for? Explain. **[2]**

[SQP 2022-23; MS 2022-23]

Q14. List any 4 activities that help in stress management. **[2]**

[SQP 2020-21; MS 2020-21]

Q15. How does meditation help in managing stress? Discuss briefly. **[2]**

[Board 2023]

Q16. Mention any two benefits of working independently. **[2]**

[Board 2023]

Q17. Explain the importance of following a healthy lifestyle in effectively dealing with stress. Write any one common factor that causes stress among children nowadays. **[2]**

[Board 2025]

3. Information and Communication Technology Skills – II

Part A, Unit 3

Multiple Choice Questions (MCQs)

Q1. The top-most directory of a hierarchical file system is called the: **[1]**

(a) Subfolder (b) Desktop (c) Icon (d) Root directory

Q2. Which password is the strongest? **[1]**

(a) 1234 (b) rahul (c) Ta9#Qm2! (d) password

Q3. Running too many programs at the same time can cause the computer to: **[1]**

(a) Print faster (b) Clean itself
(c) Save battery (d) Become slow or crash

Q4. How often should the e-mail inbox be cleaned as part of a maintenance schedule? **[1]**

(a) Daily (b) Yearly
(c) Never (d) Only when the computer crashes

Q5. Which tool removes temporary files and frees hard-disk space? **[1]**

(a) Disk-cleaner software (b) Keyboard cleaner
(c) Monitor duster (d) SPAM filter

Q6. Which menu appears when you right-click a file or folder? **[1]**

(a) Shortcut menu (b) Main menu (c) Taskbar menu (d) Title bar

Q7. The screen that appears on the monitor after a computer starts is called the: **[1]**

(a) Desktop (b) Keyboard (c) Cursor (d) Hard disk

Q8. Which software detects and removes harmful programs from a computer? **[1]**

(a) Anti-virus (b) Browser (c) Spreadsheet (d) Media player

Q9. Which practice do banks use to protect important customer information? **[1]**

(a) Printing copies (b) Leaving files open
(c) Encrypting the entire hard disk (d) Sharing passwords

Very Short Answer (VSA)

Q10. _____ is a copy of important data kept on another device so that it can be recovered if the computer fails. **[1]**

Q11. Changing the name of a file is called _____. **[1]**

Q12. The _____ is the bar at the bottom of the screen that shows open programs and the clock. **[1]**

Short Answer (SA)

Q13. What is a worm virus? How is it different from a Trojan Horse? **[2]**

Q14. How do ICT skills help us in our day-to-day activities? **[2]**

[Board 2026]

Q15. Enlist any two measures that an individual should follow to take care of his/her digital devices. **[2]**

[Board 2025]

Q16. Explain how an anti-virus protects a computer. **[2]**

Q17. Explain the term 'computer virus' and name two types. **[2]**

4. Entrepreneurial Skills – II

Part A, Unit 4

Multiple Choice Questions (MCQs)

Q1. Sanjana opened a small grocery store in her neighbourhood. Despite competition from nearby stores, her business attracted regular customers. Within a year, she expanded her store and later opened four more branches across the city. She now plans to expand to two more cities. Which stage of the career or entrepreneurial process is she currently in? **[1]**

[SQP 2025-26; MS 2025-26]

(a) Grow (b) Survive (c) Enter (d) Retire

Q2. Which of the following is a way society helps entrepreneurs? **[1]**

(a) By banning all businesses (b) By creating needs for products
(c) By stopping raw material supply (d) By taxing all profits fully

Q3. Which of the following best describes a self-employed person? **[1]**

(a) Works for an organisation and gets a salary
(b) Works only on Sundays
(c) Starts a business to satisfy people's needs
(d) Does not work at all

Q4. An entrepreneur believes in her own abilities and is sure she can succeed. Which quality is shown? **[1]**

(a) Self-confidence (b) Shyness (c) Dependency (d) Laziness

Q5. Which stage comes immediately after the Enter stage in the entrepreneurial career process? **[1]**

(a) Retire (b) Survive (c) Grow (d) Enter

Q6. Srishti is a young woman who makes earrings. She buys jute from a farmer and makes earrings from that. She sees that most women in her village do not work. So, she hires two women to help her. As her orders increase, she hires three more women to work for her. How was she helping her village grow? **[1]**

[SQP 2022-23; MS 2022-23]

(a) By selling earrings to women without a job
(b) By purchasing earrings from the local market
(c) By buying jute from the local farmer and by providing jobs to local women
(d) By attracting the women in her village with her creative earrings

Q7. An entrepreneur keeps trying new ideas even after a failure. Which quality is this? **[1]**

(a) Patience (b) Dependency (c) Fear (d) Creativity

Q8. Which statement about starting a business is a misconception? **[1]**

(a) Every business needs a very large amount of money to start
(b) A business can be started with small capital
(c) Capital can grow as the business earns profit
(d) Starting small is a valid way to begin

Q9. An entrepreneur says, 'I made a mistake, but it was my decision, so I will work to make it better.' Which quality is shown? **[1]**

(a) Dependency (b) Laziness (c) Impatience (d) Responsibility

Very Short Answer (VSA)

Q10. The four stages of the career process of an entrepreneur are Enter, Survive, Grow and _____. **[1]**

Q11. 'To get success, every business idea needs to be unique or special.' Is the above statement a myth or a fact? **[1]**

[Board 2022]

Q12. True or False: Every entrepreneur needs a huge amount of capital to start a business. **[1]**

Short Answer (SA)

Q13. Reema runs a small handmade soap business. Every morning, she decides what products to make, how many soaps to produce, and where to sell them. She also arranges raw materials and assigns tasks to her staff. Identify the two functions of an entrepreneur that are being described. **[2]**

[SQP 2025-26; MS 2025-26]

Q14. How is society helping entrepreneurs in their business? Mention any two points. **[2]**

[SQP 2023-24; SQP 2024-25; MS 2024-25]

Q15. Write any two tasks that entrepreneurs do when they run their business. **[2]**

[Board 2025; SQP 2022-23]

Q16. Explain the function of 'dividing income' with an example. **[2]**

Q17. Give two ways in which entrepreneurs help society. **[2]**

5. Green Skills – II

Part A, Unit 5

Multiple Choice Questions (MCQs)

Q1. Efforts are made to increase solar power generation so that our electricity needs are met and at the same time we do not pollute the environment or use up natural resources. Which SDG can you relate this statement to? **[1]**

[SQP 2023-24; SQP 2024-25]

(a) Life on land
(b) Affordable and clean energy
(c) Clean water and sanitation
(d) Reduced inequalities

Q2. Which of these is a man-made cause of ecological imbalance? **[1]**

(a) Earthquake (b) Volcanic eruption (c) Deforestation (d) Flood

Q3. Assertion (A): Organic farming technique is an example of a green skill that is essential for sustainable agriculture. Reason (R): Organic farming technique prioritises environment friendly and sustainable practices such as using natural fertilisers, avoiding synthetic pesticides and promoting soil health. **[1]**

[Board 2024]

(a) Both A and R are true, but R is not the correct explanation of A.
(b) A is true, but R is false.
(c) Both A and R are true and R is the correct explanation of A.
(d) A is false, but R is true.

Q4. Which SDG is 'Partnerships for the Goals'? **[1]**

(a) SDG 17 (b) SDG 1 (c) SDG 5 (d) SDG 9

Q5. Which of these is an example of SDG 6? **[1]**

(a) Affordable and clean energy
(b) Clean water and sanitation
(c) Quality education
(d) Climate action

Q6. Environmental awareness means: **[1]**

(a) Understanding and caring for the environment
(b) Ignoring nature
(c) Polluting the air
(d) Wasting water

Q7. Which of these is a green skill practice? **[1]**

(a) Using solar energy
(b) Cutting trees for fuel
(c) Dumping e-waste
(d) Overusing chemical fertilisers

Q8. The 2030 Agenda for Sustainable Development is linked to: **[1]**

(a) World War II
(b) The Industrial Revolution
(c) The Sustainable Development Goals
(d) Nuclear treaties

Q9. Which of these is an eco-friendly innovation mentioned in the NCERT textbook? **[1]**

(a) Thermocol plates
(b) Edible cutlery made from grain
(c) Plastic bags
(d) Steel-coated plastic spoons

Very Short Answer (VSA)

Q10. How many sustainable development goals were formulated by the United Nations? **[1]**

[SQP 2021-22; MS 2021-22]

Q11. What is the major purpose of the Sustainable Development Goals? **[1]**

[Board 2022]

Q12. Name the irrigation method that delivers water drop by drop to the roots of plants. **[1]**

Short Answer (SA)

Q13. What is organic farming? Mention any two benefits of practising organic farming. **[2]**

[SQP 2025-26; MS 2025-26]

Q14. Define the term 'Sustainable Development'. **[2]**

[Board 2026; SQP 2021-22]

Q15. Give two examples of green innovations by entrepreneurs mentioned in the NCERT textbook. **[2]**

Q16. Differentiate between renewable and non-renewable sources of energy with one example each. **[2]**

Q17. Enlist any two SDGs which are formulated to address the problems related to water. **[2]**

[SQP 2021-22; MS 2021-22]

6. Revisiting AI Project Cycle & Ethical Frameworks for AI

Part B, Unit 1

Multiple Choice Questions (MCQs)

Q1. Why do we need ethical frameworks for AI? **[1]**
(a) To make AI systems faster
(b) To increase the accuracy metric only
(c) To reduce the cost of data collection
(d) To ensure AI makes morally acceptable choices and avoid unintended outcomes

Q2. Which of the following represents the correct order of the stages of the AI project cycle? **[1]**

[Board 2024]
(a) Data Exploration, Problem Scoping, Modelling, Evaluation, Data Acquisition
(b) Problem Scoping, Data Acquisition, Data Exploration, Modelling, Evaluation
(c) Modelling, Data Acquisition, Evaluation, Problem Scoping, Data Exploration
(d) Data Acquisition, Data Exploration, Problem Scoping, Modelling, Evaluation

Q3. Which AI domain would be most suitable for developing a price comparison website? **[1]**

[Board 2026]
(a) Computer Vision (b) Natural Language Processing
(c) Robotics (d) Statistical Data

Q4. Which of the following is a sector-based ethical framework for AI? **[1]**

[Board 2026]
(a) Rights-based framework (b) Bioethics
(c) Utility-based framework (d) Virtue-based framework

Q5. Which value-based framework prioritises the protection of human rights and dignity? **[1]**
(a) Utility-based framework (b) Virtue-based framework
(c) Rights-based framework (d) Sector-based framework

Q6. Which of the following factors can influence our decision-making without us realising it? **[1]**
(a) Identity of the charity recipient (b) Bias towards relatives
(c) Location of the recipient (d) All of the above

Q7. You are deciding to donate to a charity. One recipient is a local school in your neighbourhood, while another is a school in a distant country. Which factor might unconsciously influence your decision? **[1]**

[SQP 2025-26; MS 2025-26]
(a) Weather on the day of donation
(b) Location of the recipient
(c) Design of the charity logo
(d) The type of pen used to sign the donation form

Q8. Which of the following is a method of collecting data for an AI project? **[1]**

[SQP 2023-24; SQP 2024-25]
(a) Surveys and interviews (b) Rumours and myths
(c) Random guesses (d) Imaginary values

Q9. The stage of the AI Project Cycle that ensures the successful integration and operation of an AI solution in the real world is: **[1]**
(a) Evaluation (b) Data Exploration (c) Modelling (d) Deployment

Q10. The purpose of defining the problem statement during the Problem Scoping stage is to: **[1]**

(a) Collect data
(b) Understand the aim and objective of the project
(c) Train the model
(d) Process data

Q11. Google Translate and Microsoft Translator, which translate text from one language to another, are examples of: **[1]**

(a) Dimensionality reduction
(b) Computer Vision
(c) Statistical Data
(d) Machine translation using NLP

Q12. The main objective of the Computer Vision domain of AI is to teach machines to: **[1]**

(a) Collect information from pixels
(b) Translate languages
(c) Compare prices of products
(d) Conduct surveys

Assertion–Reason

Q13. **Assertion (A):** Bioethics is an example of a Value-based Framework for AI.
Reason (R): Bioethics deals with ethical issues related to health, medicine, and biological sciences. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.
[Board 2026]

Q14. **Assertion (A):** Computer Vision machines can take photographs, videos and pictures from thermal or infrared sensors as input.
Reason (R): The main objective of Computer Vision is to teach machines to collect information from pixels. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q15. **Assertion (A):** Non-maleficence means avoiding actions that cause harm.
Reason (R): Maleficence refers to intentionally causing harm or wrongdoing. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Very Short Answer (VSA)

Q16. The AI Project Cycle mainly has _____ stages. **[1]**

Q17. Name the AI domain that would be used for a self-driving car's pedestrian detection system. **[1]**

Q18. Data collected for an AI project should come from reliable and _____ sources. **[1]**

Q19. The bioethics principle of avoiding harm is also called _____. **[1]**

Short Answer (SA)

Q20. What is a framework? Why are frameworks useful in problem-solving? **[2]**

Q21. Name the two main types of ethical frameworks for AI and state one point of difference between them. **[2]**

Q22. Differentiate between Data Acquisition and Data Exploration. **[2]**

[Board 2025 Comptt]

Q23. What happens in the Deployment stage of the AI project cycle, and why is it important? **[2]**

Q24. Name the six stages of the AI Project Cycle in the correct order. **[2]**

Long Answer (LA)

Q25. Outline the six stages of the AI Project Cycle and state the purpose of each stage briefly. **[4]**

Q26. Categorise the following examples under the three AI domains — Statistical Data (Data Science), NLP and Computer Vision — with justification: **[4]**

[Board 2025 Comptt (adapted)]

(a) Recommendation websites and airline route planning [1]

(b) Voice-based virtual assistants [1]

(c) Spam filters [1]

(d) An app that unlocks a phone by recognising the owner's face [1]

Case Study

Case Study: A school develops an AI system to shortlist students for a competitive scholarship. The algorithm is trained to prioritize students who complete online application forms quickly — assuming that faster completion reflects confidence, competence, and tech-savviness. However, students who are not fluent in English, or who do not have access to a computer at home, take longer to fill out the form. As a result, many deserving students are unfairly rejected by the algorithm.

Q27. Answer the following questions based on the case above. **[4]**

[SQP 2025-26; MS 2025-26]

(i) Identify two reasons why the algorithm gave biased results. [2]

(ii) Mention two bioethics principles that can help solve such a problem and explain how they apply. [2]

Case Study: A large technology company used an AI hiring algorithm to screen job applications. Trained on resumes submitted to the company over the previous ten years — most of which came from male applicants — the algorithm learned to penalize resumes that contained the word 'women' (as in 'women's chess club captain') and to prefer candidates matching the existing workforce profile. As a result, qualified women applicants were systematically ranked lower.

Q28. Answer the following questions based on the case above. **[4]**

(i) What do ethical frameworks for AI ensure? Why is this especially important for AI? [2]

(ii) Which principle of bioethics, if applied, would directly reject this algorithm's behaviour? Also name the AI domain such an algorithm would most likely belong to. [2]

7. Advanced Concepts of Modeling in AI

Part B, Unit 2

Multiple Choice Questions (MCQs)

Q1. Which statement correctly relates AI, ML and DL? **[1]**
(a) AI is a subset of Machine Learning.
(b) Machine Learning is a subset of Artificial Intelligence.
(c) Deep Learning is the broadest of the three.
(d) Machine Learning and Deep Learning are unrelated fields.

Q2. Which task is an example of supervised learning? **[1]**
(a) Grouping shoppers with similar buying habits
(b) Finding items that are often bought together
(c) Learning to walk by trial and error
(d) Classifying emails as spam or not spam using emails already labelled

Q3. Which of the following is the broadest term among AI, ML and DL? **[1]**
(a) Artificial Intelligence (b) Deep Learning
(c) Machine Learning (d) Data Science

Q4. A perceptron has four inputs with the values and weights shown below, and a bias of 0.3. Using y = w1x1 + w2x2 + w3x3 + w4x4 + (1 × b), what is the value of y? **[1]**

[SQP 2025-26]

Attribute (input)	Input x	Weight w
Has a degree in data science	1	0.6
Prior internship experience	0	0.4
Proficient in Python	1	0.5
Strong communication skills	1	0.3

(a) 1.7 (b) 1.2 (c) 1.4 (d) 2.0

Q5. Which scenario best represents a regression problem? **[1]**

[Board 2026]

(a) Identifying whether an email is spam.
(b) Grouping customers by behaviour.
(c) Recognizing faces in photos.
(d) Predicting tomorrow's temperature.

Q6. Which best describes clustering? **[1]**
(a) Assigns each data point to a predefined label
(b) Groups similar objects together without predefined labels
(c) Predicts a numerical value
(d) Learns by rewards and penalties

Q7. A neural network can have: **[1]**
(a) Only one input layer and no other layers
(b) Only labelled data
(c) No nodes at all
(d) More than one hidden layer

Q8. Which approach can adapt to changing data without a programmer rewriting its rules? **[1]**
(a) Rule-based approach
(b) Fixed calculator approach
(c) Manual checklist
(d) Learning-based approach

Q9. Which statement is TRUE about deep learning? **[1]**
(a) It is a broader field than artificial intelligence.
(b) It is a subset of machine learning that uses multi-layer neural networks.
(c) It does not use data at all.
(d) It is the same as rule-based programming.

Q10. A dataset has 500 student records, and each record has 6 attributes. How many instances does the dataset

have? **[1]**

(a) 6 (b) 3000 (c) 506 (d) 500

Q11. What is the main purpose of the Human Neural Network game? **[1]**

(a) To learn to code in Python
(b) To test a printer
(c) To practise a spreadsheet
(d) To understand and experience how a neural network works

Q12. Which of the following is a correct feature of a neural network? **[1]**

[Board 2023]

(a) It can improve the efficiency of two models.
(b) It is useful with small datasets.
(c) They are modelled on the human brain and nervous system.
(d) They need human intervention.

Assertion–Reason

Q13. **Assertion (A):** A rule-based system cannot adapt to new situations on its own.
Reason (R): Its behaviour is fixed by the rules that a programmer wrote in advance. **[1]**

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q14. **Assertion (A):** Deep learning models need large amounts of data to learn patterns.
Reason (R): Deep learning uses multi-layer neural networks, which learn the best patterns when they are trained on vast data. **[1]**

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q15. **Assertion (A):** Classification models predict discrete categories such as spam or not spam.
Reason (R): Classification models are trained on labelled training data. **[1]**

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Very Short Answer (VSA)

Q16. The column that the model is trained to predict (for example, Pass or Fail) is called the _____. **[1]**

Q17. _____ learning uses labelled data to train a model. **[1]**

Q18. Expand the term CNN. **[1]**

Q19. The layers in which the processing of data happens in a neural network are called _____ layers. **[1]**

Short Answer (SA)

Q20. Name the three types of machine learning and give one application of any two of them. **[2]**

Q21. What are features and labels in a dataset? Give one example of each. **[2]**

Q22. Identify the type of deep learning model in each description. (a) This model processes input images by learn-

ing to assign importance (weights and biases) to various features in the image, which allows it to distinguish one object from another. (b) This model is inspired by the structure of the human brain and can automatically extract features from large datasets without explicit programming. **[2]**

[SQP 2025-26]

Q23. What is the difference between Artificial Intelligence and Machine Learning? **[2]**

Q24. Explain classification with the help of an example. **[2]**

Long Answer (LA)

Q25. Explain the terms features, labels, instances and training data, with one example of each from a school's student dataset. **[4]**

Q26. Explain how a regression model and a classification model differ, using one example for each. **[4]**

Case Study

Case Study: A school has data of students' study hours and their results. Two models are built: one predicts the exam marks out of 100, and another predicts whether a student will pass or fail.

Q27. Answer the following questions based on the case above. **[4]**

(i) Which model predicts the marks, and what kind of output does it give? [1]

(ii) Which model predicts Pass or Fail? [1]

(iii) Explain why a marks predictor is a regression model, in 2 lines. [2]

Case Study: A bookstore studies 300 customer bills without any labels. It finds that customers who buy bread also often buy butter.

Q28. Answer the following questions based on the case above. **[4]**

(i) Name the type of learning used. [1]

(ii) Name the model used to find this relationship. [1]

(iii) Explain how the bookstore can use this result, in 2 lines. [2]

8. Evaluating Models

Part B, Unit 3

Multiple Choice Questions (MCQs)

Q1. Precision is defined as: **[1]**

[Board 2026; Board 2025]

(a) The ratio of correctly predicted positive observations to total predicted positive observations.
(b) The ratio of correctly predicted positive observations to total observations.
(c) The ratio of correctly predicted negative observations to total observations.
(d) The harmonic mean of true positives and true negatives.

Q2. A model gives 99% accuracy on the data used to train it but only 60% on new data. The model has most likely been: **[1]**

(a) Underfitted
(b) Evaluated correctly
(c) Tested on too much data
(d) Overfitted

Q3. In a confusion matrix, a True Positive is a case where: **[1]**

(a) The actual value is negative and the prediction is negative
(b) The actual value is negative and the prediction is positive
(c) The actual value is positive and the prediction is positive
(d) The actual value is positive and the prediction is negative

Q4. Why is it not recommended to evaluate a machine learning model using the same data on which it was trained? **[1]**

[SQP 2025-26]

(a) It helps the model learn faster
(b) It may lead to overfitting and give an overly optimistic accuracy
(c) It reduces bias in the dataset
(d) It improves the performance of the model on unseen data

Q5. _____ is defined as the percentage of correct predictions out of all the observations. **[1]**

[Board 2025 Comptt]

(a) Precision (b) Recall (c) Accuracy (d) F1

Q6. A healthy person is wrongly tested positive for a disease. This is a: **[1]**

(a) False Positive (b) True Positive (c) True Negative (d) False Negative

Q7. Statement 1: Overfitting occurs when a model memorises the training data rather than learning patterns. Statement 2: Using the same data for training and evaluation helps the model give accurate results. **[1]**

[Board 2026]

(a) Statement 1 is correct but statement 2 is incorrect.
(b) Both statements are correct.
(c) Both statements are incorrect.
(d) Statement 1 is incorrect but statement 2 is correct.

Q8. Recall is also known as: **[1]**

(a) Sensitivity or True Positive Rate
(b) Specificity
(c) Error rate
(d) Precision

Q9. In the context of autonomous vehicle safety systems, which type of error would be most critical to minimise? **[1]**

[Board 2026]

(a) False Positive (detecting danger when there isn't any)
(b) False Negative (failing to detect actual danger)
(c) True Positive (detecting danger correctly)
(d) True Negative (correctly identifying that there is no danger)

Q10. A model performs poorly on both the training data and the testing data. This condition is called: **[1]**

(a) Underfitting (b) Overfitting (c) Perfect fitting (d) Confusion

Q11. A house was predicted to cost Rs. 4,53,000, but the actual selling price was Rs. 4,88,000. What is the error rate of this prediction (rounded to three decimal places)? **[1]**

[SQP 2025-26 (key corrected)]

(a) 0.072 (b) 0.071 (c) 0.092 (d) 0.117

Q12. In a fire alarm system, if the model predicts 'Fire Present' when there is actually no fire, this is classified as: **[1]**

[Board 2026]

(a) True Positive (TP) (b) True Negative (TN)
(c) False Negative (FN) (d) False Positive (FP)

Assertion–Reason

Q13. **Assertion (A):** Recall is also known as sensitivity.
Reason (R): Recall is calculated as TP / (TP + FN). **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q14. **Assertion (A):** Evaluating a model only on its training data gives a realistic estimate of its performance.
Reason (R): Training data is the data on which the model has already learnt its patterns. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q15. **Assertion (A):** An overfitted model gives excellent accuracy on its training data.
Reason (R): It has memorised the training data and does not generalise to unseen data. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Very Short Answer (VSA)

Q16. Which evaluation parameter takes into consideration all the correct predictions? **[1]**

[SQP 2024-25]

Q17. Name the ethical concern in which evaluation results unfairly favour some groups of people over others. **[1]**

Q18. Accuracy = (TP + TN) / _____. **[1]**

Q19. The number of cases that are actually negative and correctly predicted as negative is called _____. **[1]**

Short Answer (SA)

Q20. Explain the train-test split technique with respect to a machine learning algorithm. **[2]**

[Board 2026]

Q21. A model has TP = 40, TN = 45, FP = 5 and FN = 10. Calculate its accuracy. Show your working. **[2]**

Q22. Name and explain two ways in which evaluation helps to improve an AI model. **[2]**

Q23. Explain bias as an ethical concern in model evaluation, with one example. **[2]**

Q24. How does a train-test split help to detect overfitting? **[2]**

Long Answer (LA)

Q25. Explain overfitting and underfitting. How can the training and testing accuracies help us identify each condition? **[4]**

Q26. Explain the four outcomes of a confusion matrix (TP, TN, FP and FN) using a spam email filter. Which outcome is usually the most harmful to the user, and why? **[4]**

Case Study

Case Study: A hospital uses an AI tool to predict whether a patient needs a follow-up scan. The tool was tested on data in which 85% of the patients were men. It shows 92% overall accuracy, but its accuracy for women is only 70%. The hospital publishes only the overall accuracy figure.

Q27. Answer the following questions based on the case above. **[4]**

(i) Name the ethical concern in this evaluation. [1]

(ii) Explain why the overall accuracy hides this concern. [1]

(iii) Name the ethical principle that requires the hospital to publish detailed results. [1]

(iv) Suggest one step to reduce this concern. [1]

Case Study: A sentiment analysis model classifies 500 movie reviews as Positive or Negative. Its confusion matrix is given below.

	Reality: Positive	**Reality: Negative**
Predicted: Positive	300	40
Predicted: Negative	60	100

Q28. Answer the following questions based on the case above. **[4]**

[Board 2025 Comptt]

(i) How many total cases are True Positive? [1]

(ii) Calculate the precision. [1]

(iii) Calculate the recall. [1]

(iv) Calculate the F1 score. [1]

9. Computer Vision

Part B, Unit 5

Multiple Choice Questions (MCQs)

Q1. _____ is the process of finding instances of real-world objects in images or videos. **[1]**

[SQP 2023-24; SQP 2024-25]

(a) Instance segmentation (b) Object detection
(c) Classification (d) Image segmentation

Q2. Which Computer Vision application compares a live face with stored face data to verify identity? **[1]**

(a) Google Translate (b) Facial recognition (c) Spam filtering (d) Keyword extraction

Q3. A monitor displays 1366 × 768 pixels. What is the total number of pixels? **[1]**

(a) 2,134 (b) 768 (c) 1,366 (d) 1,049,088

Q4. A pixel of a grayscale byte image has value 0. It appears as: **[1]**

(a) White (b) Black (c) Red (d) Mid grey

Q5. The concept of _ is used to apply face filters on various social media platforms. **[1]**

[Board 2024]

(a) NLP (b) Computer Vision
(c) Data Science (d) Block chain Technology

Q6. The purpose of ReLU in a CNN is to: **[1]**

(a) increase image size (b) replace negative values with zero
(c) convert colour to grayscale (d) count the number of pixels

Q7. In convolution, a kernel is: **[1]**

(a) A complete image file
(b) A small matrix of weights that slides over the image
(c) A type of pixel colour
(d) A neural network output layer

Q8. Convolution with a kernel is performed: **[1]**

(a) once for the whole image (b) only at the corners
(c) at every valid position of the image (d) only on the first colour channel

Q9. Which is an example of Computer Vision used in medical imaging? **[1]**

(a) Detecting abnormalities in X-ray or MRI images
(b) Sorting medicine names alphabetically
(c) Translating doctors' notes into Hindi
(d) Predicting a patient's mood from text messages

Q10. An RGB pixel with values (255, 0, 0) appears as: **[1]**

(a) Green (b) Blue (c) Red (d) Black

Q11. The smallest unit of a digital image is called a: **[1]**

(a) Byte (b) Bit (c) Pixel (d) Resolution

Q12. Google Search by Image allows a user to: **[1]**

(a) translate an email
(b) detect spam in inbox
(c) upload a photo to find similar images and related web pages
(d) type a question using voice

Assertion–Reason

Q13. **Assertion (A):** The term used to refer to the number of pixels in an image is resolution.
Reason (R): Resolution in an image denotes the total number of pixels it contains, usually represented as height x width. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.
[Board 2024]

Q14. **Assertion (A):** A pixel is the smallest unit of a digital image.
Reason (R): A monitor with resolution 1920×1080 displays 1920 pixels across and 1080 pixels down. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q15. **Assertion (A):** A CNN can recognise faces in photographs.
Reason (R): A CNN is a type of Artificial Neural Network. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Very Short Answer (VSA)

Q16. A grayscale image has _____ colour channel(s). **[1]**

Q17. In an RGB pixel with values (0, 0, 255), the colour seen is _____. **[1]**

Q18. State True or False: A grayscale image stores three values for each pixel. **[1]**

Q19. State True or False: Object detection can locate and label several objects in a single image. **[1]**

Short Answer (SA)

Q20. What is a 'byte image' format in the context of digital images? **[2]**
[SQP 2025-26; MS 2025-26]

Q21. Explain how the camera feature of the Google Translate app uses Computer Vision. **[2]**

Q22. Explain two applications of Computer Vision in retail. **[2]**

Q23. What is a feature map in a CNN? How is it produced? **[2]**

Q24. Explain the difference between image processing and computer vision. **[2]**

Long Answer (LA)

Q25. Describe any four applications of Computer Vision, with one line on how each works. **[4]**

Q26. A supermarket installs cameras at its billing counters and on its shelves. Read the scenario and answer the questions that follow. **[4]**

(a) Name the Computer Vision task used to identify each product at the billing counter, and describe it briefly. [2]

(b) State two benefits of this system to the supermarket. [2]

Case Study

Case Study: A digital camera captures a small 3 × 3 grayscale image. Each pixel is stored as a byte (value 0 to 255). The pixel values are shown in the table below.

Col 1	Col 2	Col 3
0	128	255
64	192	255
0	64	128

Q27. Answer the following questions based on the case above. **[4]**

(i) How many pixels does the image have? [1]

(ii) How many bytes are needed to store the whole image? [1]

(iii) What does a pixel value of 0 represent, and what does a value of 255 represent? [1]

(iv) How many pixels have the brightest value, 255? [1]

Case Study: A city traffic police department wants to reduce rule violations at busy intersections. It installs cameras that capture live video of vehicles. A Computer Vision system processes the video to detect each vehicle, read its number plate, and record whether it crossed the stop line during a red light. The department first tested the system at one intersection and then extended it to fifty.

Q28. Answer the following questions based on the case above. **[4]**

(i) Name the Computer Vision task that identifies and locates each vehicle in the video frame. [1]

(ii) The system reads the characters of each number plate. Name this application of Computer Vision. [1]

(iii) Give any two ways in which this system helps the traffic police department. [2]

10. Natural Language Processing

Part B, Unit 6

Multiple Choice Questions (MCQs)

Q1. Which type of chat bot requires coding and works on bigger databases directly? **[1]**

[Board 2026]

(a) Script bot (b) Smart bot (c) Traditional bot (d) Rule-based bot

Q2. Which type of bot is easy to create, works based on pre-written instructions, is mostly free, is easy to integrate with messaging platforms, requires little or no language processing skill, and has limited functionality? **[1]**

[SQP 2025-26]

(a) Script Bot (b) Smart Bot (c) Cleaning Bot (d) Talbot

Q3. Which word is most likely to have the lowest TF-IDF value? **[1]**

(a) A rare word that occurs in only one document
(b) The stop word 'the' that occurs frequently in every document
(c) A subject word that occurs many times in one document only
(d) A word that appears in exactly two of ten documents

Q4. A company wants to analyse customer reviews to understand satisfaction levels. Which NLP application is most suitable? **[1]**

[Board 2026; Board 2025 Comptt]

(a) Text classification (b) Sentiment analysis
(c) Keyword extraction (d) Language translation

Q5. These bots work on pre-programmed instructions inside the application or machine and are generally easy to develop. They are deployed in customer care to answer basic queries and connect users to human executives when they cannot handle the conversation. Identify the type of chatbot. **[1]**

[SQP 2022-23]

(a) Smart bot (b) Script bot (c) Learning bot (d) Voice bot

Q6. Which of these is an example of a smart bot? **[1]**

(a) A website pop-up with only fixed buttons
(b) An AI assistant that learns from conversations and answers new questions
(c) A printed quiz card
(d) A calculator

Q7. Which NLP tool expresses an opinion as positive, negative or neutral? **[1]**

(a) Text classification (b) Machine translation
(c) Sentiment analysis (d) Automatic text summarisation

Q8. After normalisation, Document 1 is 'AI is fun' and Document 2 is 'AI is useful'. How many unique words are in the dictionary? **[1]**

(a) 2 (b) 3 (c) 4 (d) 6

Q9. The sentence 'The fox jumped into the dog' is grammatically correct but has no sensible meaning. Which stage of NLP would reject it? **[1]**

(a) Lexical analysis (b) Syntactic analysis
(c) Semantic analysis (d) Discourse integration

Q10. How many tokens are there in the sentence 'Hi, Ravi!' after tokenisation? **[1]**

(a) 2 (b) 3 (c) 4 (d) 5

Q11. The main purpose of a chatbot is to: **[1]**

(a) Simulate human conversation through voice commands or text chats
(b) Compress images
(c) Compile programs
(d) Store binary data

Q12. What is the main purpose of NLP? **[1]**
(a) To make communication between computer systems and humans possible
(b) To design computer hardware
(c) To store images as pixels
(d) To write machine code manually

Assertion–Reason

Q13. **Assertion (A):** Sentence segmentation is the first step of text normalisation applied to a corpus.
Reason (R): Tokenisation is always done before sentence segmentation. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q14. **Assertion (A):** TF-IDF gives a high value to a word that appears in every document.
Reason (R): IDF gives a high weight to words that are rare across the corpus. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Q15. **Assertion (A):** Bag of Words can identify the grammatical role of each word in a sentence.
Reason (R): Bag of Words counts the frequency of each word in a document. **[1]**
(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
(c) Assertion (A) is true, but Reason (R) is false.
(d) Assertion (A) is false, but Reason (R) is true.

Very Short Answer (VSA)

Q16. _____ is the first step of the Bag of Words model, in which the data is collected and pre-processed. **[1]**

Q17. What is NLP? **[1]**

[Board 2022]

Q18. State True or False: Lemmatisation always gives a stem that is not a dictionary word. **[1]**

Q19. State True or False: In natural language, a word can have multiple meanings, and the correct meaning fits the statement according to its context. **[1]**

[SQP 2025-26]

Short Answer (SA)

Q20. Identify the stage of NLP and explain it. 'We are to the zoo going tomorrow.' and 'We are going to the zoo tomorrow.' **[2]**

[SQP 2025-26]

Q21. Is the statement 'Automatic summarisation is used in NLP applications' correct? Justify your answer with an example. **[2]**

[SQP 2021-22 (T2)]

Q22. Why are words such as 'is', 'the' and 'and' removed in text normalisation? Explain in 20-30 words. **[2]**

Q23. Explain how the value and the occurrence of a word are related in a corpus. **[2]**

[SQP 2021-22 (T2)]

Q24. What is the primary difference between human language and computer language? **[2]**

[Board 2025]

Long Answer (LA)

Q25. Explain the features of natural language, giving an example for each. **[4]**

Q26. Explain stop words, frequent words and rare words in a corpus, using a graph of occurrence against value. Why does TF-IDF pay attention to frequent and rare words? **[4]**

Case Study

Case Study: A news portal stores three short farming articles. The table shows the term frequency (TF) of four words in each article. The corpus has N = 3 documents.

Word	Doc 1	Doc 2	Doc 3
water	2	1	0
crops	0	2	1
farmer	1	0	0
the	3	3	3

Q27. Answer the following questions based on the case above. **[4]**

(i) Find the document frequency (DF) of 'water' and of 'crops'. [1]

(ii) Using IDF = N divided by DF (before taking the log), find the IDF of 'farmer'. [1]

(iii) Which word is a stop word? Justify your answer. [1]

(iv) Using TFIDF = TF $\times$ log10(N divided by DF), which word has the highest TF-IDF in Doc 1? [1]

Case Study: A bank wants a chatbot to answer basic FAQs about opening an account. The bank has a small budget and does not need the bot to handle complex conversations. The IT team is comparing a script bot with a smart bot.

Q28. Answer the following questions based on the case above. **[4]**

(i) Which chatbot type should the bank choose? Justify in one line. [1]

(ii) Name one feature of a smart bot that a script bot does not have. [1]

(iii) What will a script bot do with a question outside its pre-written scripts? [1]

(iv) Name the NLP stage that a smart bot uses to find the meaning of a customer's sentence. [1]

Answer Key (MCQs and Assertion–Reason)

Ch. 1: Q1-(c), Q2-(c), Q3-(b), Q4-(b), Q5-(a), Q6-(c), Q7-(a), Q8-(d), Q9-(a)

Ch. 2: Q1-(b), Q2-(c), Q3-(a), Q4-(a), Q5-(c), Q6-(d), Q7-(a), Q8-(d), Q9-(c)

Ch. 3: Q1-(d), Q2-(c), Q3-(d), Q4-(a), Q5-(a), Q6-(a), Q7-(a), Q8-(a), Q9-(c)

Ch. 4: Q1-(a), Q2-(b), Q3-(c), Q4-(a), Q5-(b), Q6-(c), Q7-(d), Q8-(a), Q9-(d)

Ch. 5: Q1-(b), Q2-(c), Q3-(c), Q4-(a), Q5-(b), Q6-(a), Q7-(a), Q8-(c), Q9-(b)

Ch. 6: Q1-(d), Q2-(b), Q3-(d), Q4-(b), Q5-(c), Q6-(d), Q7-(b), Q8-(a), Q9-(d), Q10-(b), Q11-(d), Q12-(a), Q13-(d), Q14-(a), Q15-(b)

Ch. 7: Q1-(b), Q2-(d), Q3-(a), Q4-(a), Q5-(d), Q6-(b), Q7-(d), Q8-(d), Q9-(b), Q10-(d), Q11-(d), Q12-(c), Q13-(a), Q14-(a), Q15-(b)

Ch. 8: Q1-(a), Q2-(d), Q3-(c), Q4-(b), Q5-(c), Q6-(a), Q7-(a), Q8-(a), Q9-(b), Q10-(a), Q11-(a), Q12-(d), Q13-(b), Q14-(d), Q15-(a)

Ch. 9: Q1-(b), Q2-(b), Q3-(d), Q4-(b), Q5-(b), Q6-(b), Q7-(b), Q8-(c), Q9-(a), Q10-(c), Q11-(c), Q12-(c), Q13-(a), Q14-(b), Q15-(b)

Ch. 10: Q1-(b), Q2-(a), Q3-(b), Q4-(b), Q5-(b), Q6-(b), Q7-(c), Q8-(c), Q9-(c), Q10-(c), Q11-(a), Q12-(a), Q13-(c), Q14-(d), Q15-(d)