**KENDRIYA VIDYALAYA SANGTHAN LUCKNOW REGION**
**SESSION ENDING EXAMINATION- 2024-25**
**ARTIFICIAL INTELLIGENCE (SUBJECT CODE - 417) CLASS-IX**

# MARKING SCHEME

**Max. Time: 2 Hours** **Max. Marks: 50**

## General Instructions:

1. Please read the instructions carefully.
2. This Question Paper consists of **21 questions** in two sections: Section A & Section B.
3. Section A has Objective type questions whereas Section B contains Subjective type questions.
4. **Out of the given (5 + 16 =) 21 questions, a candidate has to answer (5 + 10 =) 15 questions in the allotted (maximum) time of 2 hours.**
5. All questions of a particular section must be attempted in the correct order.
6. **SECTION A - OBJECTIVE TYPE QUESTIONS (24 MARKS):**
   - **i.** This section has 05 questions.
   - **ii.** Marks allotted are mentioned against each question/part.
   - **iii.** There is no negative marking.
   - **iv.** Do as per the instructions given.
7. **SECTION B – SUBJECTIVE TYPE QUESTIONS (26 MARKS):**
   - **i.** This section has 16 questions.
   - **ii.** A candidate has to do 10 questions.
   - **iii.** Do as per the instructions given.
   - **iv.** Marks allotted are mentioned against each question/part.

# SECTION A: OBJECTIVE TYPE QUESTIONS

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| **Q. 1** | **Answer any 4 out of the given 6 questions on Employability skill (1 x 4 = 4 marks)** | |
| **i.** | d. Self-aware | |
| **ii.** | c. Positive attitude | |
| **iii.** | a. bits (0,1) | |
| **iv.** | b. Chrome | |
| **v.** | c. Oral communication | |
| **vi.** | d. All of these | |
| **Q. 2** | **Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)** | |
| **i.** | • **a. What**<br><br>The "41s canvas" (likely referring to a framework for problem analysis, such as a business or strategic canvas) helps us to analyze and recognize the nature of the problem by addressing **"What"** the problem is, what issues need attention, and what the potential challenges are. | |
| **ii.** | **c. CV (Computer Vision)**<br>The game 'Quick Draw' uses computer vision (CV) to recognize the drawings made by players. | |
| **iii.** | • **b. Data Visualization**<br>Data visualization is used to represent data in graphical forms (like charts, graphs, | |

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| | and symbols) to help people understand complex information. | |
| **iv** | **a. Modularity**<br>Modularity refers to breaking down a large, complex problem into smaller, manageable parts or modules. | |
| **v** | **d. Machine Learning**<br>Machine learning (ML) is widely used in fraud detection as it can analyze patterns and detect anomalies in data that may indicate fraudulent activity. | |
| **vi** | **d. all of the above**<br>The AI project cycle helps in creating better AI projects, faster development, and understanding the overall process. | |
| **Q. 3** | **Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)** | |
| **i** | **B. Supervised learning**. | |
| **ii** | **d. End user**<br><br>The end users are the people who face the problem and would benefit from the solution. They are the ultimate recipients of the product or service being developed and are directly impacted by it. | |
| **iii** | **b. Machine learning**<br><br>Machine learning enables machines to improve at tasks with experience. It allows algorithms to learn from data and make predictions or decisions without being explicitly programmed for each task. | |
| **iv** | Here, both the **Assertion (A)** and **Reason (R)** are true, but they are not directly related. The composition of a self-driving car (with sensors, cameras, radar, and AI) does not explain why the owner might be liable in an accident. Liability depends on various legal factors and circumstances.<br><br>**Correct choice:** (b) Both A and R are true but R is not the correct explanation of A. | |
| **v** | **Assertion (A)** is true because a pie chart indeed represents values using segments of varying sizes. However, **Reason (R)** is false; pie charts are not very effective when there are many data series or categories. When there are too many segments, a pie chart can become cluttered and hard to interpret. Bar charts or other visual representations are often better for displaying large datasets.<br><br>**Correct choice:** (c) A is true but R is false. | |
| **vi** | **c) The chance of an event happening**<br><br>Probability refers to the likelihood or chance of a specific event occurring. It is a measure of how likely an event is to happen, usually expressed as a number between 0 (impossible event) and 1 (certain event). | |

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| **Q 4** | **Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)** | |
| **i** | **b) Data Acquisition**. | |
| **ii** | c) Both a) and b) **— Structured Data and Unstructured Data.** | |
| **iii** | d) Debugging**.** | |
| **iv** | d) All of the above | |
| **v** | d) All of the above | |
| **vi** | C) Measurable**.** | |
| **Q. 5** | **Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)** | |
| **i** | c) Program**.** | |
| **ii** | a) input()**.** | |
| **iii** | c) .py**.** | |
| **iv** | c) Tuples**.** | |
| **v** | c.17 | |
| **vi** | D) Statistical tools | |

# SECTION B: SUBJECTIVE TYPE QUESTIONS

**Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)**
**Answer each question in 20 – 30 words.**

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| **Q. 6** | What are verbal communications? Give one example for oral communications.<br>Verbal communication is the sharing of information by using words. It is what most people use as a method of communication.<br>Examples: • Face-to-face conversation: • Talking on a phone • Classroom teaching, business discussion and public speeches<br>**(1 marks for definition and 1 marks for example )** | **2** |

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| **Q. 7** | Write the four steps for effective Time management?<br>Four Steps for Effective Time Management are: a. Organize: We should plan our day-to-day activities. b. Prioritize: We should make our to-do-list c. Control: We should have control over our activities and time. d. Track: We should identify and note where we have spent our time.<br>**( 2 marks for correct answer )** | **2** |
| **Q. 8** | What is the difference between a businessman and an entrepreneur?<br>A businessman walks on the defined path, but an entrepreneur believes in making his own path, which becomes a guideline. **( 2 marks for correct answer)** | **2** |
| **Q. 9** | Explain the concept of cloud computing and its advantages?<br>Cloud computing refers to the delivery of computing services over the internet, including storage, processing power, and software applications. Advantages include scalability, cost-efficiency, accessibility from anywhere with internet access, and automatic updates and maintenance by the service provider.<br>**( 2 marks for correct answer )** | **2** |
| **Q. 10** | Explain 'Affordable and Clean Energy?<br>• Using solar power i.e., power generated using the sun does not cause pollution as it does not require burning of non-renewable fuels, such as coal.<br>• Use of biogas is also an eco-friendly alternative to natural gas.<br>**(2 marks for correct answer)** | **2** |

**Answer any 4 out of the given 6 questions in 20 – 30 words each (2 x 4 = 8 marks)**

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| **Q. 11** | Write down any two Applications of Statistics?<br>Predict the performance of sports teams ▪ It can be used to find out specific things such as: o the reading level of students o the opinions of voters o the average weight of a city's resident o Probability<br>**(2 marks for any two correct answer)** | **2** |
| **Q. 12** | What do you mean by Data Science and Computer Vision? Give suitable examples fo each.<br>• Data Science allows the system to collect numerous data, maintains data sets and derives meaning or sense out of them. e.g. - Price Comparison Websites like PriceGrabber, Price Runner<br>• Computer Vision enables a machine to get and analyse visual information from images, videos etc. and predicts or decides. e.g. – Self driving cars, Face lock<br>**( 2 marks for correct answer )** | **2** |
| **Q. 13** | What is Data Literacy?<br>Data literacy means knowing how to understand, work with, and talks about data. It's about being able to collect, analyze, and show data in ways that make sense. Data literacy is the ability to understand, interpret and communicate with data.<br>**( 2 marks for correct answer )** | **2** |

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| **Q. 14** | A bag contains 5 red balls, 3 blue balls, and 2 green balls. A ball is drawn at random. Calculate the probability of drawing a blue ball.<br>Ans: 3/10<br>**( 2 marks for correct answer )** | **2** |

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| **Q. 15** | What are the negative Impacts of generative AI on Society ?<br>1.Misinformation and deep fakes 2.privacy concerns 3.Job displacement 4.Bias and discrimination<br>(2 marks for any two correct application) | **2** |
| **Q. 16** | Write any two feature of python language ?<br>1.Simple and Readable Syntax:<br>2.Interpreted and Interactive:<br>3.High-Level Language:<br>4.Dynamic Typing:<br>5.Extensive Standard Library:<br>6.Cross-Platform Compatibility:<br>7.Object-Oriented Programming (OOP):<br>8.Dynamically Typed<br>9.Community and Documentation<br>10.Versatility:<br>( 2 marks for any two correct feature ( one marks for each)) | **1+1** |

**Answer any 3 out of the given 5 questions in 50– 80 words each (4 x 3 = 12 marks)**

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| **Q. 17** | Explain role of AI in modern education and their impact on society?<br>The role of **AI in modern education** is transformative, bringing about significant changes in how learning is delivered, managed, and experienced. Here are some key roles of AI in education and its impact on society:<br>**1. Personalized Learning:**<br>**2. Intelligent Tutoring Systems:**<br>**3. Automation of Administrative Tasks:**<br>**4. Enhanced Engagement with AI-Powered Tools:**<br>**5. Data-Driven Insights and Predictive Analytics:**<br>**6. Access to Education and Lifelong Learning:**<br>**Impact on Society:**<br>1. **Democratization of Education:**<br>2. **Changing Employment Landscape:**<br>3. **Inequality and Digital Divide:**<br>4. **Ethical Considerations:**<br>5. **Global Collaboration and Innovation:**<br>6. **Shaping the Future Workforce:**<br>AI is revolutionizing modern education by enhancing personalization, automating administrative tasks, and making education more accessible and efficient. While its impact on society is largely positive, it also brings challenges that must be addressed, including equity, job displacement, and ethical concerns. Overall, the future of education, powered by AI, has the potential to transform both individual learning experiences and the broader societal landscape, fostering innovation, equity, and continuous growth. (**4 marks for correct answer)** | **2+2** |

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| **Q. 18** | Define AI, ML and DL. Also state the relation among them?<br>♣ AI enables machines to mimic human intelligence for decision making and problem solving. ♣ ML imitates the human skills of learning, performing the task and improving its accuracy over time. It may need human intervention.<br>♣ DL uses multi-layered neural networks to simulate the complex decision-making power of the human brain by using large data sets. It does not need human intervention.<br>AI > ML > DL<br>**(3marks for each correct explanation and 1 marks of relationship)** | **3+1** |
| **Q.19** | Considering the ethical challenges associated with generative AI, what are your thoughts on establishing guidelines or regulations to ensure responsible use of these technologies? How can we balance the potential benefits and risks?<br>Ans- Establishing guidelines or regulations for the responsible use of generative AI is crucial to navigate its ethical challenges effectively.<br>1. Ethical Principles and Frameworks: Develop ethical principles that guide the development and deployment of generative AI. These could include principles such as fairness, accountability, transparency, and privacy. Frameworks like the IEEE's Ethically Aligned Design can serve as a starting point.<br>2. Regulatory Oversight: Introduce regulations that ensure compliance with ethical standards. This might involve regulatory bodies setting guidelines for specific sectors where generative AI is used, such as healthcare, finance, and criminal justice.<br>3. Risk Assessment and Mitigation: Conduct thorough risk assessments to identify potential harms associated with generative AI systems. Mitigation strategies can then be implemented to minimize these risks, such as robust testing, validation procedures, and continuous monitoring.<br>4. Public and Stakeholder Engagement: Involve the public and relevant stakeholders in discussions about the use of generative AI. This can help ensure that diverse perspectives are considered and that the benefits and risks are weighed appropriately.<br>5. Education and Awareness: Promote understanding of generative AI technologies among policymakers, developers, and the general public. This can help mitigate fears and misconceptions while fostering informed decision-making.<br>6. International Collaboration Foster international collaboration on guidelines and standards for generative AI. Given the global nature of AI development and deployment, international cooperation can help create consistent ethical standards and regulations.<br>**Balancing the potential benefits** and risks of generative AI involves a nuanced approach that acknowledges its transformative potential while mitigating potential harms. By implementing thoughtful guidelines and regulations, we can harness the benefits of generative AI while safeguarding against its misuse. **4 marks for correct answer** | **4** |
| **Q 20** | Describe two different way of collecting data .<br>**(2 marks for each )** | **4** |
| **Q 21** | # Program to print the multiplication table of a given number<br># Taking input from the user<br>number = int(input("Enter a number to print its multiplication table: "))<br># Printing the multiplication table<br>print(f"Multiplication table for {number} is:")<br>for i in range(1, 11):<br>print(f"{number} x {i} = {number * i}") | **4** |

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| | **(1 marks for each correct line of source code)** | |

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