CBSE | DEPARTMENT OF SKILL EDUCATION

ARTIFICIAL INTELLIGENCE (SUBJECT CODE - 843)

Blue-print for Sample Question Paper for Class XII (Session 2026-2027)

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

PART A - EMPLOYABILITY SKILLS (10 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	
1	Communication Skills – IV	1	1	2
2	Self-Management Skills – IV	2	1	3
3	ICT Skills – IV	1	1	2
4	Entrepreneurial Skills – IV	1	1	2
5	Green Skills – IV	1	1	2
TOTAL QUESTIONS		**6**	**5**	**11**
NO. OF QUESTIONS TO BE ANSWERED		**Any 4**	**Any 3**	**Any 7**
TOTAL MARKS		**1 x 4 = 4**	**2 x 3 = 6**	**10 MARKS**

PART B - SUBJECT SPECIFIC SKILLS (40 MARKS):

UNIT NO.	NAME OF THE UNIT	OBJECTIVE TYPE QUESTIONS	SHORT ANSWER TYPE QUESTIONS	DESCRIPTIVE/ LONG ANS. TYPE QUESTIONS	TOTAL QUESTIONS
		1 MARK EACH	2 MARKS EACH	4 MARKS EACH	
2	Data Science Methodology: An Analytic Approach to Capstone Project	5	1	1	7
3	Making Machines See	5	1	***	6
5	Introduction to Big Data and Data Analytics	3	1	1	5
6	Understanding Neural Networks	5	1	1	7
7	Generative AI	3	1	1	5
8	Data Storytelling	3	1	1	5
TOTAL QUESTIONS		**24**	**6**	**5**	**35**
NO. OF QUESTIONS TO BE ANSWERED		**Any 20**	**Any 4**	**Any 3**	**Any 27**
TOTAL MARKS		**1 x 20 = 20**	**2 x 4 = 8**	**4 x 3 = 12**	**40 MARKS**

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Sample Question Paper for Class XII (Session 2026-2027)

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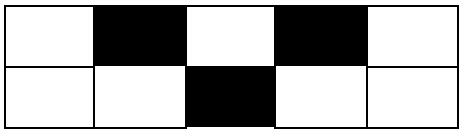
General Instructions:

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

Q. 1	**Answer any 4 out of the given 6 questions on Employability Skills (1 x 4 = 4 marks)**	
i.	The acronym 'MINTS' is a set of simple rules associated with _____ a) Active Listening b) Punctuation c) Capitalization d) Effective Communication	**1**
ii.	Rohan mostly holds grudges against others and has distrust for others, including friends, family members, and partners. What kind of disorder does he have ? a) Paranoid personality disorder b) Schizoid personality disorder c) Schizotypal personality disorder d) Dependent personality disorder	**1**
iii.	Which type of motivation includes activities for which there is no apparent reward but derives enjoyment and satisfaction in doing them? a) Positive motivation b) Extrinsic motivation c) External motivation d) Intrinsic motivation	**1**
iv.	Which one is not a type of spread sheet ? a) Google Sheet b) Libre office calc c) Tableau d) d. Microsoft Excel	**1**
v.	_____is the ability to continue to do something, even when it is difficult. a) Perseverance b) Decisiveness c) Indolence d) d. Lethargy	**1**
vi.	Which of the following gases is *not* a greenhouse gas? a) Carbon dioxide b) Methane c) Nitrous oxide d) Oxygen	**1**
Q. 2	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	What does the acronym RMSE stand for in the context of evaluating machine learning models? a) Root Mean Square Error b) Regular Mean Square Estimate c) Random Mean Square Error d) Real Mean Square Evaluation	**1**

ii.	Ashmitha uses computer vision to sort apples and oranges based on colour and size. Which step of the computer vision process is responsible for separating the fruit from the background? a) Image Acquisition b) Image Pre-processing c) High Level Processing d) Detection/Segmentation	**1**
iii.	Assertion(A) : Activation functions in neural networks are like decision-makers for each neuron.	**1**
	Reason(R): They decide whether a neuron should be activated or not based on the input it receives. a) Both A and R are correct, and R is the correct explanation of A. b) Both A and R are correct, but R is not the correct explanation of A. c) A is correct, but R is incorrect. d) A is incorrect, but R is correct.	
iv.	What is the primary focus of generative AI ? a) Classifying data into categories b) Generating new data that resembles existing data c) Cleaning and preprocessing datasets d) Measuring the accuracy of algorithms	**1**
v.	In the context of data storytelling, which framework can be used to structure the presentation of data and insights in a way that captivates the audience's attention and guides them through the narrative journey? a. Freytag's Pyramid b. Design thinking Framework c. John Rollin's Pyramid d. Data Science Methodology	**1**
vi.	The output of a neuron can be expressed as a linear combination of two components(w and b) combined with input features (x) and it is expressed mathematically as w * x + b. What is w and b ? a. Weight and Bias b. Weight and Bonus c. Wage and Bias d. Wage and Bonus	**1**
Q. 3	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	A data science team at a school is tasked with predicting student performance based on factors like study habits, attendance, and participation in extracurricular activities. The team needs to decide whether to use a classification model (to predict whether a student will pass/fail) or a regression model (to predict the exact score a student will get). Which stage of the Foundational methodology of Data Science are they currently in? a. Business Understanding b. Data Understanding c. Analytic Approach d. Modeling	**1**

ii.	Identify the odd one out from the following list of Data Analytics Tools. a. Orange Data Mining b. Tableau c. PowerBI d. MySQL	**1**
iii.	The perceptron, created by Frank Rosenblatt in 1958, is also known as _____ a. Standard Neural Network b. Proper Neural Network c. Recurrent Neural Network d. Generative Adversial Network	**1**
iv.	Which one among the following generative AI tool is not used for generating images? a. Google's Lumiere b. Canva c. DALL-E d. Stable Diffusion	**1**
v.	 Select the correct digital representation of the above image a. 0 0 0 0 0 1 1 1 1 1 b. 1 0 1 0 1 1 1 0 1 1 c. 0 1 0 1 0 0 1 0 1 0 d. 0 1 0 1 0 0 0 0 0 0	**1**
vi.	Which of the following loss functions is not used in regression problems? a. Log Loss b. MAE c. Quantile Loss d. RMSLE	**1**
Q. 4	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	A logistics company wants to optimize delivery times using data science. They are following Data science methodology steps to create an AI model for this. Which of the following will not be done by the company during Data Requirements Stage? a. Identifying the types of data required, such as numbers, words, or images. b. Considering the structure in which the data should be organized c. Identifying the sources from which we can collect the data d. Extracting data from primary and secondary sources	**1**
ii.	In the final stage of computer vision, _____ plays a crucial role in interpreting and extracting meaningful information from the detected objects or regions within digital images a. Image Segmentation b. High level processing c. Feature Extraction d. Image Acquisition	**1**

iii.	<table><tr><td>**A. STRUCTURED**</td></tr><tr><td>**B. SEMI STRUCTURED**</td></tr><tr><td>**C. UNSTRUCTURED**</td></tr></table> <table><tr><td>**1. XML File**</td></tr><tr><td>**2. Excel File**</td></tr><tr><td>**3. Mp3 File**</td></tr></table> Pick out the correct option a. A□ 1 , B □ 2 , C □ 3 b. A□ 2 , B □ 3 , C □ 1 c. A□ 2 , B □ 1 , C □ 3 d. A□ 3, B □ 1 , C □ 2	**1**
iv.	Which among the following is the activation function used in neural networks? a. ReLU b. RMSE c. RSLV d. MAE	**1**
v.	Which visualization technique compares data across categories using color to identify strong and weak categories? a. Histogram b. Candlestick chart c. Heat map d. Pie Chart	**1**
vi.	Single object tasks in detection and segmentation stage in computer vision focus on analysing individual objects within an image, with two main objectives which are _____and _____. a. Semantic segmentation and instance segmentation b. High level processing and low level processing c. Classification and Localization d. Image resizing and Image normalization	**1**
Q. 5	**Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)**	
i.	Feature Engineering is the process of selecting, modifying, or creating new features from raw data to improve the performance of machine learning models. (State whether *True/False).*	**1**
ii.	An Artificial Neural Network with two or more hidden layers is known as a _____ a. Deep Neural Network b. Convolution Neural Network c. Standard Neural Network c. Artificial Multi Network.	**1**
iii.	Identify the **incorrect** statement based on computer vision. a. Computer processes an image and it perceives it as a collection of tiny squares known as picture element which represents a specific color value. b. During the process of digitization an image is converted into a grid of pixels. c. The resolution of the image is determined by the number of pixels it contains. d. The resolution should be lower enough to get a detailed image which closely resembles the original one.	**1**
iv.	Presenting AI-generated content as one's work, whether intentionally or unintentionally, raises ethical questions regarding intellectual property rights and academic integrity. What is this action termed as? a. Discrimination b. Plagiarism c. Copy-right d. Identity theft	**1**

v.	Which characteristic of "V" in Big Data is related to consistency, accuracy, quality, and trustworthiness. a. Veracity b. Variability c. Variety d. Volume	**1**
vi.	Which statement is not true related to stories? a. Stories are a valuable form of human expression. b. Stories keep us fixed in the present and do not allow us to imagine other places or times. c. Each type of story creates a sense of connection, and folk tales, in particular, strengthen our sense of belonging to our community. d. Stories help establish our identity.	**1**

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.

Q. 6	What are the factors which act as barriers to active listening ?	**2**
Q. 7	Big Five Factors also called as Five Factor Model is used to describe an individual's personality. Explain any two factors.	**2**
Q. 8	Lakshmi has a spreadsheet containing student details such as name, class, and subject marks. The "Class" column includes values like XII A, XII B, and XII C. She wants to display only the records of students from section XII B. What should she do to achieve this?	**2**
Q. 9	What do you mean by organizational skills? List out the important organizational skills.	**2**
Q. 10	What is the main aim of the National Action Plan on Climate Change (NAPCC) launched in 2008?	**2**

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

Q. 11	Explain any two techniques used in the preprocessing stage of computer vision with example.	**2**
Q. 12	What is Evaluation. Name the two main phases of Model evaluation.	**2**
Q. 13	Propagation functions define how signals propagate through the neural network. Distinguish between the two types of propagation functions.	**2**
Q. 14	**Your Media** is an OTT streaming service dedicated to delivering entertainment video content to global audiences. It provides users with on-demand access to a vast library of Movies, web series, short films and video albums. List out any two " V's " of 3V framework and explain the same.	**2**
Q. 15	What is data visualization? What is the use of data visualization?	**2**

Q. 16	Explain the ethical and social implications of deepfake technology with example.	**2**

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

Q. 17	Explain the working process of Big Data Analytics	**4**
Q. 18	LLM are employed in the generation of Audio, Video, Text and Images. With respect to this, answer the following a. Write Full Form of LLM and explain it. b. Give two examples of LLM. c. Give two limitations of LLM.	**4**
Q. 19	What is Data Story telling? Explain the key elements of Data story telling.	**4**
Q. 20	Data Modelling focuses on developing models that are either descriptive or predictive. Explain descriptive modelling and predictive modelling. List out the techniques used in both modelling.	**4**
Q. 21	Every neural network comprises layers of interconnected nodes. What is a neural network? Explain the layers of a neural network.	**4**