

Marking Scheme Strictly Confidential (For Internal and Restricted use only) SR. Secondary School Supplementary Examination, 2025 SUBJECT NAME : ARTIFICIAL INTELLIGENCE (SUB. CODE-843)	
<u>General Instructions: -</u>	
1	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
2	“Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, Evaluation done and several other aspects. Its leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in Newspaper/Website, etc. may invite action under various rules of the Board and IPC.”
3	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one’s own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In class-XII, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.
4	The Marking Scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
5	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.
6	Evaluators will mark (✓) wherever answer is correct. For wrong answer CROSS ‘X’ be marked. Evaluators will not put right (✓) while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing.
7	If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.

8	If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
9	If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note “Extra Question” .
10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks _____(example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines). This is in view of the reduced syllabus and number of questions in question paper.
13	Ensure that you do not make the following common types of errors committed by the Examiner in the past:- • Leaving answer or part thereof unassessed in an answer book. • Giving more marks for an answer than assigned to it. • Wrong totaling of marks awarded on an answer. • Wrong transfer of marks from the inside pages of the answer book to the title page. • Wrong question wise totaling on the title page. • Wrong totaling of marks of the two columns on the title page. • Wrong grand total. • Marks in words and figures not tallying/not same. • Wrong transfer of marks from the answer book to online award list. • Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) • Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
14	While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.
15	Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.
16	The Examiners should acquaint themselves with the guidelines given in the “Guidelines for Spot Evaluation” before starting the actual evaluation.
17	Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.
18	The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.

Set 4

MARKING SCHEME ARTIFICIAL INTELLIGENCE (SUB. CODE-843)

Time allowed : 2 Hours

Maximum Marks : 50

SECTION A : OBJECTIVE TYPE QUESTIONS

Q. No.	Marks
1.	
(i) (C) The gestures of listener have no effect on the speaker.	1
(ii) (A) Both statement I and statement II are correct.	1
(iii) (B) Personality disorder	1
(iv) (C) Ctrl + M	1
(v) (B) They volunteer to take risks	1
(vi) True	1
2.	
(i) Capstone project	1
(ii) (B) Perceive insights they might not see without charts or graphs.	1
(iii) (B) Integrate knowledge from various subjects	1
(iv) (C) Project scoping	1
(v) (B) Because AI can only solve problems with identifiable patterns	1
(vi) (C) Integrating the model into production environments.	1
3.	
(i) (B) Third	1
(ii) (A) People understand better when data is explained through a story.	1
(iii) (D) Testing the AI model in a real-world environment	1
(vi) (B) They come from unraveling relationship between data points	1
(v) (C) Analyze	1
(vi) (B) Tensor Flow	1
4.	
(i) (D) Stakeholder alignment	1

- (ii) (D) Increase the volume of data 1
- (iii) (C) Statement I is correct but Statement II is incorrect 1
- (iv) (C) 1



- (v) (B) It prevents human biases in selecting test data 1
- (vi) (D) Pattern 1

5.

- (i) (A) It helps to standardize communication and gives results clearly. 1
- (ii) (A) Break down the problem into smaller units before coding. 1
- (iii) (B) Due to the large volume of data AI systems handle 1
- (iv) (C) Descriptive, Predictive 1
- (v) (C) All relevant subsets of training data 1
- (vi) (A) Train-test split 1

6. A simple sentence is one that has only one subject and one predicate or has only one finite verb. 2

A complex sentence is one, which consists of two or more coordinate clauses, joined by a coordinating conjunction.

(1 mark for each correct definition)

7. The five parameters that describe an individual's personality are : (any four) 2

- Openness
- Consciousness
- Extraversion
- Agreeableness
- Neuroticism

(½ mark each for any four correct parameter)

8. The text can be aligned either left, right, center or justified. The text can be aligned. 'Left or right aligned' means that text will be aligned to the left or right margin, respectively. 'Center' aligns the text to the center of the page. 'Justify' aligns the text to the right and left margins. 2

(½ mark for each correct alignment type)

9. (Any two) 2

- Identifying entrepreneurial opportunity

- Turning ideas into action
- Feasibility study
- Resourcing
- Setting up an enterprise
- Managing the enterprise
- Growth and development

(1 mark for each correct function)

10. • Avoid cutting of trees
• Invest in soil health and restoration

2

OR

Any other relevant steps

(1 mark each for any two correct steps)

11. Differentiate between Cross-Validation and Train-Test Split :

2

Cross-validation	Train-Test Split
Cross-validation gives a more accurate measure of model quality, which is especially important if you are making a lot of modeling decisions.	Train-Test Split is less efficient as compared to cross-validation.
If your dataset is smaller, you should run cross validation.	A simple train-test split is sufficient for larger datasets.

(1 mark for each correct difference)

12. RMSE means Root Mean Squared Error.

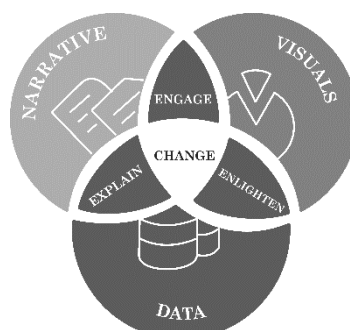
2

In machine Learning when we want to look at the accuracy of our model, we take the root mean square of the error that has occurred between the test values and the predicted values mathematically.

(1 mark for correct expansion, 1 mark for correct purpose)

- 13.

2



(1 mark for correct diagram, 1 mark for correct labels)

14. It's important to check the quality of a model because:

2

1. To make sure predictions are correct and consistent, especially in critical domains like healthcare, finance, or safety systems.
2. To ensure it performs accurately and reliably on new data.
3. To confirm that the model isn't just memorizing training data but can generalize well to real-world scenarios.
4. To identify and address any biases in the model that could lead to unfair or discriminatory outcomes.

In short, checking model quality is crucial to ensure that your AI solution is effective, ethical, and trustworthy in real-world use.

OR

Consider any other valid answer too

(2 marks for correct answer)

15. Design Thinking is a design methodology that provides a solution-based approach to solving problems. It's extremely useful in tackling complex problems that are ill-defined or unknown. 2

(1 mark for correct definition, 1 mark for correct use)

16. Open Frameworks : Scikit – learn, XG Boost, Tenor Flow 2
Development Tools : Data Robot, HZO, Watson Studio, Azure ML Studio, Sagemaker, Anaconda

(any **two** of each) (½ mark for each correct framework/tool)

17. Data storytelling is a structured approach for communicating insights drawn from data, and invariably involves a combination of three key elements: data, visuals, and narrative. When the narrative is accompanied with data, it helps to explain the audience what's happening in the data and why a particular insight has been generated. When visuals are applied to data, they can enlighten the audience to the insights that they wouldn't perceive without the charts or graphs. 4

Finally, when narrative and visuals are merged together, they can engage or even entertain an audience. When you combine the right visuals and narrative with the right data, you have a data story that can influence and drive change.

(1 mark each for correct data & visual elements' explanation,
2 marks for correct explanation of narrative element)

18. Classification functions predict a label. Regression loss predicts a quantity. 4
The following are the different types of classification loss : (any **four**)

Log Loss

Focal Loss

KL Divergence / Relative Entropy

Exponential Loss

Hinge Loss

(1 mark each for correct prediction,

½ mark each for any four correct category)

19. While the fundamental testing concepts are fully applicable in AI development projects, there are additional considerations too. These are as follows :

- The volume of test data can be large, which presents complexities.
- Human biases in selecting test data can adversely impact the testing phase, therefore, data validation is important.
- Your testing team should test the AI and ML algorithms keeping model validation, successful learnability, and algorithm effectiveness in mind.
- Regulatory compliance testing and security testing are important since the system might deal with sensitive data, moreover, the large volume of data makes performance testing crucial.
- You are implementing an AI solution that will need to use data from your other systems, therefore, systems integration testing assumes importance.
- Test data should include all relevant subsets of training data, i.e., the data you will use for training the AI system.
- Your team must create test suites that help you validate your ML models.

(1 mark each for any two correct consideration)

20. The first step in an AI project cycle is "understanding the problem". Begin formulating your problem by asking yourself this simple - is there a pattern? The premise that underlies all Machine Learning disciplines is that there needs to be a pattern, If there is no pattern, then the problem cannot be solved with AI technology. It is fundamental that this question is asked before deciding to embark on an AI development journey. If it is believed that there is a pattern in the data, then AI development techniques may be employed. Applied uses of these techniques are typically geared towards answering five types of questions, all of which may be categorized as being within the umbrella of predictive analysis:

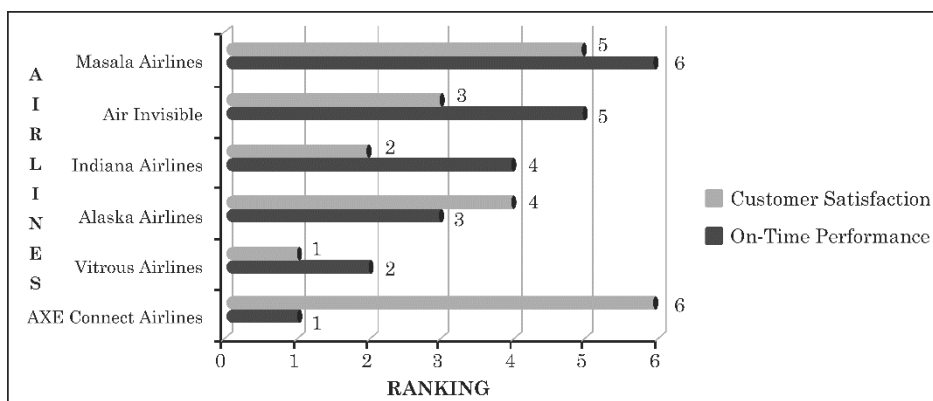
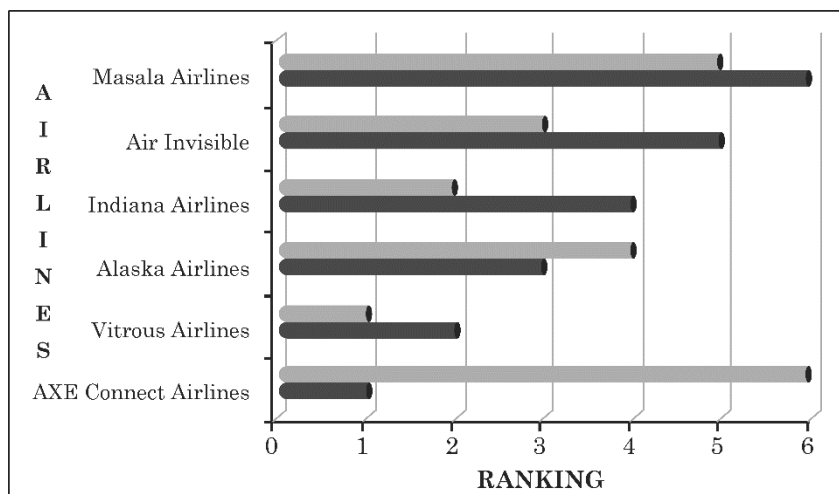
- (1) Which category ? (Classification)
- (2) How much or how many ? (Regression)
- (3) Which group ? (Clustering)
- (4) Is this unusual ? (Anomaly Detection)
- (5) Which option should be taken ? (Recommendation)

It is important to determine which of these questions you're asking, and how answering it helps you solve your problem.

4 Marks for the correct answer

21.

4



- The airlines should have high customer satisfaction and good on-time performance.
- Both customer satisfaction and on-time performance determines the overall rating of an airline.
 - (a) Yes, it is important. The importance of a narrative comes from the fact that it explains what is going on within the data set. It offers context and meaning, relevance and clarity. A narrative shows the audience where to look and what not to miss and also keeps the audience engaged.
(1 mark for yes, 1 mark for explanation)
 - (b) Image 2 is a better data story.
Reason 1. The insight given at the bottom of the visual is giving a clear idea about context which is not therein Image 1. In Image 2, visual provides a compelling narrative.
(1 mark for correct identification of the better data story, 1mark for explanation)