



Shri Shankaracharya Institute of Professional Management & Technology

Department of Computer Science and Engineering (AI)

Class Test – I , Session- July-December 2023

Sem- B.Tech5thSem (CSE (AI)

Subject- Artificial Intelligence

Time Allowed: 2hrs.

Max Marks: 40

Note: Solve any five questions out of six.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
Q1	Give the list of application areas of Artificial Intelligence.	08	Understanding	CO1
Q2	What do you mean by Intelligent Agent? Explain different types of Intelligent Agents.	08	Understanding	CO1
Q3	List down the characteristics of an Intelligent Agent. Explain Learning Agent in detail.	08	Understanding	CO1
Q4	Describe the level of models in Artificial Intelligence	08	Understanding	CO2
Q5	Define AI. List down the several techniques of Artificial Intelligence	08	Understanding	CO2
Q6	Explain search in Artificial Intelligence. Write difference between informed and uninformed search with example.	08	Understanding	CO2

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Class Test – I, Session- July-December 2023

Sem- B.Tech5thSem (CSE (AI))

Subject- Introduction to Machine Learning

Time Allowed: 2hrs.

Max Marks: 40

Note: Solve any five questions out of six.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
Q1	Differentiate AI, ML & DL with example in details. Also explain the application of AI.	08	Understanding	CO1
Q2	Classify different Machine Learning methods. Explain supervised Machine Learning method with example. Also explain Classification and Association problem.	08	Understanding	CO1
Q3	Explain Reinforcement Learning with example. Also explain different Applications of Machine Learning.	08	Applying	CO1
Q4	Explain Machine Learning Lifecycle in details.	08	Understanding	CO1
Q5	Explain Simple Linear Regression. Types of Linear Regression, Cost function, Residue & R-squared value.	08	Understanding	CO2
Q6	Explain Simple Linear Regression, Multiple Linear Regression & Polynomial Regression in detail.	08	Understanding	CO2



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Class Test – I Session: JUL - DEC 2023 Month - NOV 2023

B. Tech. Computer Science & Engineering (AI)

Semester: 5th

Section: -

Subject: Probability and Statistics

Code: C113514(22)

Time Allowed: 2 Hours

Max Marks: 40

Note: - All Questions Compulsory. Do All the Calculations for two decimal places.

Q. N.	Question	Marks	Levels of Blooms Taxonomy	COs
Q 1	The following table gives the length of life of 150 electric lamps: Life (Hundred Hrs.): 0-4 4-8 8-12 12-16 16-20 20-24 24-28 28-32 Numbers of Lamps: 4 12 40 41 27 13 9 4 Estimate the average life of the lamps and also calculate mode.	[4+4]	Remember & Apply	CO1
Q 2	The following data relate to the age of a group of workers. Calculate the standard deviation and mean deviation from median. Age(In Years): 20-25 25-30 30-35 35-40 40-45 45-50 50-55 No. of Workers: 170 110 80 45 40 30 25	[8]	Remember & Apply	CO1
Q 3	Calculate Karl Pearson's coefficient of Skewness and coefficient of Kurtosis for the following: Income (In Rs.): 400-500 500-600 600-700 700-800 800-900 No. of Employee: 8 16 20 17 3	[4+4]	Remember & Apply	CO1
Q 4	(a) A problem is given to three students A, B, and C whose chances of solving it are $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ respectively. What is the probability that the problem will be solved? (b) Two cubical dice are tossed, find the probabilities of the following events: The sum of numbers (i) Divisible by 3 (ii) Less than 7, (iii) Divisible by 2 or 3 but not both and (iv) Greater than or equal to 10.	[4+4]	Remember & Apply	CO3
Q 5	Suppose the 5% of men and 0.25% of women have a grey hair. A grey haired person is selected at random. What is the probability of this person being male? Assume that there are equal number of male and females.	[8]	Remember & Apply	CO3



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Class Test – I , Session- July-December 2023

Sem- B.Tech 5thSem (CSE (AI))
Subject- Internet of Things (IoT)

Time Allowed:2 hrs.

Max Marks: 40

Note: Solve any five questions out of six.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
Q1	What is IoT? Explain the enabling technologies of IoT.	08	Understanding	CO1
Q2	Which communication protocols are used for M2M communication? Write differences between machines in M2M and things in IoT.	08	Understanding	CO1
Q3	Write short notes on evolution of IoT	08	Remember	CO1
Q4	Explain the IoTWF standardised architecture in detail.	08	Understanding	CO1
Q5	Explain the simplified architecture of IoT.	08	Understanding	CO2
Q6	What is sensor and actuator? Write difference between sensors and actuators.	08	Understanding	CO2



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Q6	What is sensor and actuator? Write difference between sensors and actuators.	08	Understanding	CO2

Note: Attempt any five. Each question carries equal marks.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs																														
Q1	Differentiate between Deterministic Finite Automata & Non-Deterministic Finite Automata.	8	Understand	CO1																														
Q2	Convert the following Mealy machine into corresponding Moore machine, where input alphabets are {0,1} and output alphabets are {0,1}	8	Apply	CO1																														
	<table border="1"> <thead> <tr> <th></th> <th colspan="2">input = 0</th> <th colspan="2">input = 1</th> </tr> <tr> <th>ML</th> <th>State</th> <th>Output</th> <th>State</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>→q₁</td> <td>q₃</td> <td>0</td> <td>q₂</td> <td>0</td> </tr> <tr> <td>q₂</td> <td>q₁</td> <td>1</td> <td>q₄</td> <td>0</td> </tr> <tr> <td>q₃</td> <td>q₂</td> <td>1</td> <td>q₁</td> <td>1</td> </tr> <tr> <td>q₄</td> <td>q₄</td> <td>1</td> <td>q₃</td> <td>0</td> </tr> </tbody> </table>		input = 0		input = 1		ML	State	Output	State	Output	→q ₁	q ₃	0	q ₂	0	q ₂	q ₁	1	q ₄	0	q ₃	q ₂	1	q ₁	1	q ₄	q ₄	1	q ₃	0			
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q ₃	q ₂	1	q ₁	1																														
q ₄	q ₄	1	q ₃	0																														
Q3	Write properties of Regular Expression. Construct the finite automata form the given Regular Expression.	2 6	Apply	CO2																														
	$(a+b)^* \cdot b \cdot a (a+b)^*$																																	
Q4	Find Epsilon-closure of each state Convert the following Epsilon-NFA to the NFA	2 6	Apply	CO1																														
Q5	Minimize the given finite automata by using My-Hill Nerode theorem	8	Apply	CO1																														
Q6	What is Regular Expression? Construct the finite automata from the given Regular expression. (aba + baa + abba).	2 6	Apply	CO2																														