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 **SRM Institute of Science and Technology**

**College of Engineering and Technology**

**School of Computing**

**DEPARTMENT OF NETWORKING AND COMMUNICATIONS**

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

**Academic Year: 2022-23 (EVEN) BATCH 2**

**Test: CLAT-3**  **Date:** 09-05-2023

**Course Code & Title: 18CSC305J Artificial Intelligence**

**Duration:** 40 Minutes

**Year & Sem:** III / VI **Max. Marks:** 20

**Course Articulation Matrix (CAM)**

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| **Course Learning Outcomes (CLO)** | **At the end of this course, learners will be able to:** | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** | **PO 9** | **PO 10** | **PO 11** | **PO 12** |
| **CLO-4** | Develop planning and apply learning algorithms on real world problems | M | H | M | H | H | - | - | - | M | L | - | H |
| **CLO-5** | Design an expert system and implement natural language processing techniques | M | H | H | H | H | - | - | - | M | L | - | H |

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| **Part – B**  **(2x 5= 10 Marks) Answer any 2 questions** | | | | | | |
| 6 | Discuss in detail about the different components of the Expert System.  An expert system mainly contains three components:   1. User Interface: It enables a user to interact or communicate with the expert system to find the solution for a problem. 2. Inference Engine: It is called the main processing unit or brain of the expert system. It applies different inference rules to the knowledge base to draw a conclusion from it. The system extracts the information from the KB with the help of an inference engine.   Knowledge Base: The knowledge base is a type of storage area that stores the domain-specific and high-quality knowledge. | 5 | BL 3 | 5 | 2 | 2.1.3 |
| 7 | Solve the cross-word puzzle    **Left to Right**  1. Forward chaining is also called \_\_\_\_\_\_\_\_ (10 Letters)  3. Syntax Analysis is done in \_\_\_\_\_\_\_\_\_\_\_\_ phase of Information Extraction (7 Letters)  5. It is measuring the proportion of relevant documents that have been retrieved (6 Letters)  **Top to Down**  4. \_\_\_\_\_\_\_\_\_\_\_\_ expert systems consist of rules, set of facts and an interpreter (9 Letters)  **Down to Top**   1. \_\_\_\_\_\_\_\_\_\_\_\_ is used for combining the fuzzy subsets to form a single fuzzy set for output variable in a fuzzy expert system (11 Letters)   **Left to Right**  1. Forward chaining is also called \_\_**Datadriven**\_\_\_\_\_\_ (10 Letters)  3. Syntax Analysis is done in \_\_**Parsing**\_\_\_\_\_\_\_\_\_\_ phase of Information Extraction (7 Letters)  5. It is measuring the proportion of relevant documents that have been retrieved **Recall** (6 Letters)  **Top to Down**  4. \_\_\_\_\_**Rulebased**\_\_\_\_\_\_\_ expert systems consist of rules, set of facts and an interpreter (9 Letters)  **Down to Top**  2. \_\_\_\_\_\_\_**Coordinates**\_\_\_\_\_ is used for combining the fuzzy subsets to form a single fuzzy set for output variable in a fuzzy expert system (11 Letters) | 5 | BL 3 | 5 | 2 | 2.2.1 |
| 8 | Consider you are an HR for an Ecommerce company ,how would you apply business intelligence process to improve operational efficiency and Employee management.  a Business intelligence (BI) in eCommerce is the process of transforming data into useful information, which you can use to make intelligent decisions.   1. Business intelligence enables you to acquire better knowledge and make decisions based on facts and figures rather than assumptions. It helps you use data and information effectively and efficiently. 2. Business intelligence aims to acquire knowledge that can help companies make better decisions. 3. Business intelligence discovers and assesses information about a company’s past performance, 4. Business intelligence is a part of business management, while management science uses business analytics to prepare strategies for future success. 5. BI solutions involve summarizing and simplifying data into custom reports that are easy to understand 6. Business intelligence deals with structured data, while analytics deals with structured and unstructured data sources and their interrelationships among various databases to provide meaningful results to businesses. 7. Business intelligence deals with structured data, while analytics deals with structured and unstructured data sources and their interrelationships among various databases to provide meaningful results to businesses. | 5 | BL 3 | 4 | 2 | 2.1.1 |
| **Part – C**  **( 1x 10= 10 Marks )** | | | | | | |
| 9.a | Consider an IPL Match for which each player will be paid according to the runs scored on that day’s match  Y=Rs.1000(x) + Rs.200000,where, X=score Y=salary  If the above line equation is given then choose an algorithm and explain its working to predict the salary of the player.  **Linear Regression - Problem Formulation (2 marks)**  **Working of the Algorithm ( 8 marks )**  Objective Function  Cost / Loss Function  Gradient Descent Algorithm | 10 | BL3 | 4 | 1 | 1.1.1 |
| (OR) | | | | | | |
| 9.b | Illustrate the process of syntatic and semantic analysis using Natural Language Processing Techniques.  The NLP meta model used to gain insight into the underlying structure of language, in order to optimally process and interpret any given input. It outlines a set of linguistic categories that can be used to accurately distinguish and represent the different parts of speech, syntax and semantics. It helps to identify how the components of language are structures and how they interact. This is in turn leads to more effective communication and writing.  Common Techniques  • Part-of-Speech Tagging  • Named Entity Recognition  • Semantic Role Labelling  • Word Sense Disambiguation  • Concept extraction  • Syntactic Parsing | 10 | BL2 | 5 | 2 | 2.3.1 |

**\*Program Indicators are available separately for Computer Science and Engineering in AICTE examination**

**reforms policy.**

**Course Outcome (CO) and Bloom’s level (BL) Coverage in Questions**