DISTANCE EDUCATION

DIPLOMA IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

EXAMINATION - MAY 2021

FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE

(CBCS 2021 Calendar Year Onwards)

Time : Three hours　　　　　　　　Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions

1. List out AI languages.

2. How do we define a problem in AI?

3. What are called Heuristic search techniques?

4. Mention the merits of problem reduction technique.

5. What is the need for mapping in knowledge representation?

6. Write down the various issues in knowledge representation.

7. What is predicate logic?

8. What is called control knowledge?

9. What are the various methods of learning?

10. What is meant by rote learning?

PART B — (5 × 5 = 25 marks)

Answer ALL choosing either (a) or (b) in each questions.

11. (a) Discuss briefly about problems, problem spaces and search.

Or

(b) List down the application areas of AI.

12. (a) Explain Hill climbing algorithm with example.

Or

(b) What is means end analysis? Explain.

13. (a) Explain the various approaches in knowledge representation.

Or

(b) Discuss about frame problem.

14. (a) Compare Procedural vs Declarative knowledge.

Or

(b) How resolution is carried out in predicates? Explain.

15. (a) Write short notes on: Learning by taking advice.

Or

(b) Discuss about Explanation based learning.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain AI problems and AI techniques.

17. Describe Best first search algorithm.

18. What is knowledge representation? How it is achieved in AI?

19. Describe the rules in predicate and propositional logic.

20. Discuss the various methods of AI learning.

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DISTANCE EDUCATION

DIPLOMA IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

EXAMINATION - MAY 2021

RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

(CBCS 2021 Calendar Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define the term DBMS.

2.   What are the three different data models?

3.   What are weak entities?

4.   What is the use of relationship set?

5.   What is an Integrity constraint?

6.   What is the purpose of views?

7.   What is cartesian product in Relational algebra?

8.   Mention the parts of a basic SQL query.

9.   What are called aggregative operators?

10. Write down the rules of First Normal form.

PART B – (5 × 5 = 25 marks)

Answer ALL choosing either (a) or (b) in each question

11. (a) Write short notes on Database Schemas.

Or

(b) Explain the functions of Query processor.

12. (a) Discuss about relationship and relationship sets.

Or

(b) Explain ER model with neat sketch.

13. (a) Discuss the steps in altering tables and views.

Or

(b) Explain selection and projection set operations in relational algebra.

14. (a) What do you mean by correlated subquery? Explain with an example.

Or

(b) Discuss about tuple relational calculus

15. (a) Explain joins in SQL with an example.

Or

(b) Discuss the problems caused by redundancy.

PART C – (3 × 10 = 30 marks)

Answer any THREE questions.

16. Compare Database system vs File system.

17. Describe the various Data models with neat sketch.

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18. Write about Integrity constraints and enforcing integrity constraints with examples.

19. Explain Nested subqueries with examples.

20. Describe FIRST, SECOND, THRID and Boyce Codd Normal forms.

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DISTANCE EDUCATION

DIPLOMA IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

EXAMINATION - MAY 2021

R PROGRAMMING

(CBCS 2021 Calendar Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Write any two features of R language.

2.   What is called Rscript?

3.   Write down the syntax of if else statement in R language

4.   What are the rules for string manipulation in R?

5.   How will you create a vector in R?

6.   What is the purpose of Lists in R?

7.   What is called Factor?

8. What is meant by melting and casting?

9. How to read excel files in R?

10. Mention the elements of pie chart in R.

PART B — (5 × 5 = 25 marks)

Answer ALL choosing either (a) or (b) each questions.

11. (a) Describe the various data types in R.

Or

(b) Write about Logical operators in R with syntax and example.

12. (a) Explain loop control statements in R

Or

(b) Explain Function definition in R with syntax

13. (a) Explain the steps in creating, manipulating and accessing lists.

Or

(b) How will you convert list into a vector? Explain.

14. (a) Write down the R code to extract data from data frame.

Or

(b) Write short notes on R packages.

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15. (a) How will you read binary files in R? Explain with syntax and example

Or

(b) Discuss the steps in creating a chart in R

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the structure of R program.

17. Write a R program to find the factorial of a given number using Recursion

18. Discuss about vector manipulation in R.

19. Write a R program for Matrix multiplication.

20. Describe the steps in connecting R with mySQL.

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