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Reg. No. :

Code No. : 8384

Sub. Code : WCAE 21

M.C.A. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Second Semester

Computer Application

Elective III — ARTIFICIAL INTELLIGENCE AND
MACHINE LEARNING

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer :

1. Which search algorithm requires less memory?
(a) Optimal (b) Depth First
(c) Breadth First (d) Linear
2. Which of the given language is not commonly used for AI?
(a) LISP (b) Prolog
(c) Python (d) Perl

3. Which one is not the component of an Expert system?
(a) Knowledge base (b) Inference engine
(c) User interface (d) Manufacturing
4. Which one is the simplest heuristic search technique?
(a) depth first (b) best first
(c) hill climbing (d) generate and test
5. Which is known as a special kind of local maximum?
(a) local minima (b) ridge
(c) plateau (d) backtrack
6. Which level includes facts and goals?
(a) mapping (b) knowledge
(c) symbol (d) representation
7. Find out the symbol which indicates the implication operation.
(a) ^ (b) V
(c) ← (d) →

8. The resolution procedure has _____ clauses.
- (a) 1 (b) 2
(c) 3 (d) 4
9. Which representation requires the control information?
- (a) declarative (b) procedural
(c) logical (d) behavioural
10. Which one is NOT the characteristic of big data?
- (a) volume (b) velocity
(c) variety (d) value
11. The output of the training process in machine learning is
- (a) ML algorithm (b) ML model
(c) NULL (d) Label
12. The computing environment that combines a private cloud with a public cloud is also known as
- (a) hierarchical cloud (b) public
(c) private (d) hybrid
13. Machine learning is the application of
- (a) Blockchain (b) Artificial Intelligence
(c) Deep Learning (d) Data Science

14. _____ algorithms can be used with labelled data.
- (a) regression (b) clustering
(c) association (d) outlier
15. The term machine learning was coined by
- (a) James Gosling (b) Arthur Samuel
(c) Dennis Ritchie (d) Guido van Rossum

PART B — (5 × 4 = 20 marks)

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

Each answer should not exceed 250 words.

16. (a) How will you fix the criteria for success in AI?
Or
(b) How will you identify the intelligent processes of production systems?
17. (a) Interpret the means-ends analysis.
Or
(b) Enumerate the entities for representation and mappings.
18. (a) How will you represent instance and is-a- relationship?
Or
(b) Explain the need of logic programming.

19. (a) Interpret the role of big data in machine learning.

Or

(b) Classify the statistical techniques used for machine learning.

20. (a) Distinguish between AI and ML.

Or

(b) How will you justify the impact of machine learning in future?

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

21. (a) Draw an AI algorithm for making the possible moves on 9 × 9 vector elements which are arranged as follows :

1 2 3

4 5 6

7 8 9

Or

(b) Design a search tree for water jug problem by using check duplicate nodes.

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22. (a) Implement the simple hill climbing algorithm with required states.

Or

(b) Determine the challenges in knowledge representation.

23. (a) Consider the following facts :

Steve only like easy courses.

Science courses are hard.

All the courses in the basket-weaving department are easy.

BK301 is a basket-weaving course.

Use resolution to answer the question, "What course would Steve like?"

Or

(b) How will you apply matching logic on chess coin movements?

24. (a) Explain the importance of hybrid cloud in machine learning environment.

Or

(b) Describe the role of data mining concepts in machine learning.

25. (a) How will you incorporate the insights of machine learning in real time applications?

Or

(b) Explain the life cycle of machine learning.

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