



RAN-2511000903022007

B.C.A. (NCF-NEP) AI & DA (Sem.-III) Examination November - 2025 Major-2 AI-Oriented Programming and Data Structures in Python (TH)

Time: 1 Hour]

[Total Marks: 25

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Figure to the right indicate full marks.
- (4) Mention your options clearly.

Seat No.:

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Student's Signature

Q.1. A. MCQ (4 out of 5)

4

1. What is a Rule-Based System in AI?
 - A) A system for managing databases
 - B) A system that makes decisions based on predefined rules
 - C) A method for encrypting data
 - D) A technique for network optimization
2. The Postfix form of the expression $(A + B) * C / D$ is

A) $AB + CD*/$	B) $* + A B / CD$
C) $+ / * A B C D$	D) $A B + C * D /$
3. Abstraction can be implemented by

A) Destructor	B) Method Overriding
C) Method Overloading	D) Constructors
4. Efficiency of algorithm depends on 1) Time complexity 2) Auxillary space

A) Only 1 is true 2 is false	B) Only 2 is true 1 is false
C) Both are true	D) Both are false
5. _____ is a repository where all rules and facts are stored

A) Inference Engine	B) Knowledge base
C) Working memory	D) User interface

Q.1. B. Short Questions (4 out of 5)

4

1. What is stack?
2. Define the term Constructor.
3. What do you mean by time complexity?
4. Explain the term CSP.
5. What is backtracking ?

Q.2. A. Attempt following

5

1. Explain the concept of polymorphism in python

OR

1. What is inheritance? Explain types of inheritance with example

Q.2. B. Write the concept of double ended queue and its implementation **4**

Q.3. Write Any Two Out of Three **8**

- A. Write the difference between binary tree and binary search tree
 - B. Explain uninformed search strategies in problem solving techniques.
 - C. What is rule based expert system? Explain its Architecture.
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