

1. Which of the following is an example of a Pushdown Automaton (PDA)?

- a) Deterministic Finite Automaton (DFA)\
- b) Non-deterministic Finite Automaton (NFA)\
- c) Deterministic Pushdown Automaton (DPDA)\
- d) Non-deterministic Pushdown Automaton (NPDA)

Answer: d) Non-deterministic Pushdown Automaton (NPDA)

Explanation: PDAs extend the capabilities of DFAs and NFAs by allowing them to use a stack, enabling more complex processing of languages, and NPDA allows for multiple possible transitions from a given state and input symbol.

2. Which type of PDA requires that for each state and input symbol, there is only one possible transition?

- a) Non-deterministic PDA (NPDA)\
- b) Deterministic PDA (DPDA)\
- c) Deterministic Finite Automaton (DFA)\
- d) Non-deterministic Finite Automaton (NFA)

Answer: b) Deterministic PDA (DPDA)

Explanation: In DPDA, the transition function provides only one possible next state for each state and input symbol pair.

3. What is the primary difference between a Deterministic Pushdown Automaton (DPDA) and a Non-deterministic Pushdown Automaton (NPDA)?

- a) DPDA has a finite number of states, while NPDA has an infinite number of states.\
- b) DPDA always halts on any input, while NPDA may not halt on some inputs.\
- c) DPDA can have multiple possible transitions from a state for a given input, while NPDA has only one transition.\
- d) DPDA uses a stack with a limited size, while NPDA uses an unbounded stack.

Answer: c) DPDA can have multiple possible transitions from a state for a given input, while NPDA has only one transition.

Explanation: NPDA allows for non-deterministic transitions, meaning there can be multiple possible next states for a given state and input symbol pair.

4. Which of the following describes the conversion of a Pushdown Automaton (PDA) into a Context-Free Grammar (CFG)?

- a) CFG to PDA conversion\
- b) PDA to CFG conversion\
- c) PDA to DFA conversion\
- d) NFA to CFG conversion

Answer: b) PDA to CFG conversion

Explanation: This process involves creating a context-free grammar that generates the same language as the given PDA.

5. What does a Petri net model represent?

- a) A graphical modeling tool used for software development\

- b) A mathematical modeling tool used for analyzing concurrent systems\
- c) A type of network architecture used in computer networking\
- d) A data structure used for organizing information in databases

Answer: b) A mathematical modeling tool used for analyzing concurrent systems

Explanation: Petri nets are mathematical models used to represent and analyze systems with concurrent processes.

6. Which of the following represents a formal language generated by a Pushdown Automaton (PDA)?

- a) Regular language\
- b) Context-free language\
- c) Context-sensitive language\
- d) Unrestricted grammar language

Answer: b) Context-free language

Explanation: PDAs are capable of recognizing and generating context-free languages.

7. Which of the following automata can recognize languages that a Deterministic Finite Automaton (DFA) cannot?

- a) Non-deterministic Finite Automaton (NFA)\
- b) Deterministic Pushdown Automaton (DPDA)\
- c) Non-deterministic Pushdown Automaton (NPDA)\
- d) Turing Machine

Answer: c) Non-deterministic Pushdown Automaton (NPDA)

Explanation: NPDA can recognize non-context-free languages, which are beyond the capabilities of DFAs.

8. What is a characteristic feature of a Petri net model?

- a) Transition rules\
- b) Stack operations\
- c) Finite control\
- d) Parallelism

Answer: d) Parallelism

Explanation: Petri nets represent systems with concurrent processes, allowing for modeling of parallelism.

9. Which of the following represents the conversion of a Context-Free Grammar (CFG) into a Pushdown Automaton (PDA)?

- a) CFG to PDA conversion\
- b) PDA to CFG conversion\
- c) PDA to DFA conversion\
- d) NFA to CFG conversion

Answer: a) CFG to PDA conversion

Explanation: This process involves creating a PDA that recognizes the language generated by

the given CFG.

10. Which type of Pushdown Automaton (PDA) has a limited number of transitions from a state for a given input symbol?

- a) Non-deterministic PDA (NPDA)\
- b) Deterministic PDA (DPDA)\
- c) Non-deterministic Finite Automaton (NFA)\
- d) Deterministic Finite Automaton (DFA)

Answer: b) Deterministic PDA (DPDA)

Explanation: DPDA restricts the number of possible transitions from a state for a given input symbol, ensuring determinism.

Related Posts:

1. Automata Theory MCQs
2. Finite Automata MCQs
3. Grammars MCQs
4. Turing Machine MCQs
5. Introduction to Energy Science MCQ
6. Ecosystems MCQ
7. Biodiversity and its conservation MCQ
8. Environmental Pollution mcq
9. Social Issues and the Environment MCQ
10. Field work mcq
11. Discrete Structure MCQ

12. Set Theory, Relation, and Function MCQ
13. Propositional Logic and Finite State Machines MCQ
14. Graph Theory and Combinatorics MCQ
15. Relational algebra, Functions and graph theory MCQ
16. Data Structure MCQ
17. Stacks MCQ
18. TREE MCQ
19. Graphs MCQ
20. Sorting MCQ
21. Digital Systems MCQ
22. Combinational Logic MCQ
23. Sequential logic MCQ
24. Analog/Digital Conversion, Logic Gates, Multivibrators, and IC 555 MCQ
25. Introduction to Digital Communication MCQ
26. Introduction to Object Oriented Thinking & Object Oriented Programming MCQ
27. Encapsulation and Data Abstraction MCQ
28. MCQ
29. Relationships - Inheritance MCQ
30. Polymorphism MCQ
31. Library Management System MCQ
32. Numerical Methods MCQ
33. Transform Calculus MCQ
34. Concept of Probability MCQ
35. Algorithms, Designing MCQ
36. Study of Greedy strategy MCQ
37. Concept of dynamic programming MCQ
38. Algorithmic Problem MCQ

39. Trees, Graphs, and NP-Completeness MCQ
40. The Software Product and Software Process MCQ
41. Software Design MCQ
42. Software Analysis and Testing MCQ
43. Software Maintenance & Software Project Measurement MCQ
44. Computer Architecture, Design, and Memory Technologies MCQ
45. Basic Structure of Computer MCQ
46. Computer Arithmetic MCQ
47. I/O Organization MCQ
48. Memory Organization MCQ
49. Multiprocessors MCQ
50. Introduction to Operating Systems MCQ
51. File Systems MCQ
52. CPU Scheduling MCQ
53. Memory Management MCQ
54. Input / Output MCQ
55. Operating Systems and Concurrency
56. Software Development and Architecture MCQ
57. Software architecture models MCQ
58. Software architecture implementation technologies MCQ
59. Software Architecture analysis and design MCQ
60. Software Architecture documentation MCQ
61. Introduction to Computational Intelligence MCQ
62. Fuzzy Systems MCQ
63. Genetic Algorithms MCQ
64. Rough Set Theory MCQ
65. Introduction to Swarm Intelligence, Swarm Intelligence Techniques MCQ

66. Neural Network History and Architectures MCQ
67. Autoencoder MCQ
68. Deep Learning MCQs
69. RL & Bandit Algorithms MCQs
70. RL Techniques MCQs
71. Review of traditional networks MCQ
72. Study of traditional routing and transport MCQ
73. Wireless LAN MCQ
74. Mobile transport layer MCQ
75. Big Data MCQ
76. Hadoop and Related Concepts MCQ
77. Hive, Pig, and ETL Processing MCQ
78. NoSQL MCQs Concepts, Variations, and MongoDB
79. Mining social Network Graphs MCQ
80. Mathematical Background for Cryptography MCQ
81. Cryptography MCQ
82. Cryptographic MCQs
83. Information Security MCQ
84. Cryptography and Information Security Tools MCQ
85. Data Warehousing MCQ
86. OLAP Systems MCQ
87. Introduction to Data& Data Mining MCQ
88. Supervised Learning MCQ
89. Clustering & Association Rule mining MCQ
90. Fundamentals of Agile Process MCQ
91. Agile Projects MCQs
92. Introduction to Scrum MCQs

- 93. Introduction to Extreme Programming (XP) MCQs
- 94. Agile Software Design and Development MCQs
- 95. Machine Learning Fundamentals MCQs
- 96. Neural Network MCQs
- 97. CNNs MCQ
- 98. Reinforcement Learning and Sequential Models MCQs
- 99. Machine Learning in ImageNet Competition mcq
- 100. Computer Network MCQ
- 101. Data Link Layer MCQ
- 102. MAC Sub layer MCQ
- 103. Network Layer MCQ
- 104. Transport Layer MCQ
- 105. Raster Scan Displays MCQs
- 106. 3-D Transformations MCQs
- 107. Visualization MCQ
- 108. Multimedia MCQs
- 109. Introduction to compiling & Lexical Analysis MCQs
- 110. Syntax Analysis & Syntax Directed Translation MCQs
- 111. Type Checking & Run Time Environment MCQs
- 112. Code Generation MCQs
- 113. Code Optimization MCQs
- 114. INTRODUCTION Knowledge Management MCQs
- 115. Organization and Knowledge Management MCQs
- 116. Telecommunications and Networks in Knowledge Management MCQs
- 117. Components of a Knowledge Strategy MCQs
- 118. Advanced topics and case studies in knowledge management MCQs
- 119. Conventional Software Management MCQs

- 120. Software Management Process MCQs
- 121. Software Management Disciplines MCQs
- 122. Rural Management MCQs
- 123. Human Resource Management for rural India MCQs
- 124. Management of Rural Financing MCQs
- 125. Research Methodology MCQs
- 126. Research Methodology MCQs
- 127. IoT MCQs
- 128. Sensors and Actuators MCQs
- 129. IoT MCQs: Basics, Components, Protocols, and Applications
- 130. MCQs on IoT Protocols
- 131. IoT MCQs
- 132. INTRODUCTION Block Chain Technologies MCQs
- 133. Understanding Block chain with Crypto currency MCQs
- 134. Understanding Block chain for Enterprises MCQs
- 135. Enterprise application of Block chain MCQs
- 136. Block chain application development MCQs
- 137. MCQs on Service Oriented Architecture, Web Services, and Cloud Computing
- 138. Utility Computing, Elastic Computing, Ajax MCQs
- 139. Data in the cloud MCQs
- 140. Cloud Security MCQs
- 141. Issues in cloud computinG MCQs
- 142. Introduction to modern processors MCQs
- 143. Data access optimizations MCQs
- 144. Parallel Computing MCQs
- 145. Efficient Open MP Programming MCQs
- 146. Distributed Memory parallel programming with MPI MCQs

- 147. Review of Object Oriented Concepts and Principles MCQs.
- 148. Introduction to RUP MCQs.
- 149. UML and OO Analysis MCQs
- 150. Object Oriented Design MCQs
- 151. Object Oriented Testing MCQs
- 152. CVIP Basics MCQs
- 153. Image Representation and Description MCQs
- 154. Region Analysis MCQs
- 155. Facet Model Recognition MCQs
- 156. Knowledge Based Vision MCQs
- 157. Game Design and Semiotics MCQs
- 158. Systems and Interactivity Understanding Choices and Dynamics MCQs
- 159. Game Rules Overview Concepts and Case Studies MCQs
- 160. IoT Essentials MCQs
- 161. Sensor and Actuator MCQs
- 162. IoT Networking & Technologies MCQs
- 163. MQTT, CoAP, XMPP, AMQP MCQs
- 164. IoT MCQs: Platforms, Security, and Case Studies
- 165. MCQs on Innovation and Entrepreneurship
- 166. Innovation Management MCQs
- 167. Stage Gate Method & Open Innovation MCQs
- 168. Innovation in Business: MCQs
- 169. Database Management System (DBMS) MCQs
- 170. Relational Data models MCQs
- 171. Data Base Design MCQs
- 172. Transaction Processing Concepts MCQs
- 173. Control Techniques MCQs

- 174. DBMS Concepts & SQL Essentials MCQs
- 175. DESCRIPTIVE STATISTICS MCQs
- 176. INTRODUCTION TO BIG DATA MCQ
- 177. BIG DATA TECHNOLOGIES MCQs
- 178. PROCESSING BIG DATA MCQs
- 179. HADOOP MAPREDUCE MCQs
- 180. BIG DATA TOOLS AND TECHNIQUES MCQs
- 181. Pattern Recognition MCQs
- 182. Classification Algorithms MCQs
- 183. Pattern Recognition and Clustering MCQs
- 184. Feature Extraction & Selection Concepts and Algorithms MCQs
- 185. Pattern Recognition MCQs
- 186. Understanding Cybercrime Types and Challenges MCQs
- 187. Cybercrime MCQs
- 188. Cyber Crime and Criminal justice MCQs
- 189. Electronic Evidence MCQs
- 190. Introduction to Information Security MCQ
- 191. Computer Graphics Multimedia PYQ
- 192. Style sheets MCQs
- 193. Process Control MCQS
- 194. Signals and Systems MCQs
- 195. Understanding AM and FM Transmission Noise and Receiver Characteristics
- 196. Op-Amp Characteristics MCQs
- 197. Digital filters Design Techniques Mcqs
- 198. ERROR CONTROL AND DATA LINK PROTOCOLS mcqs
- 199. Satellite Communication MCQs
- 200. ELECTRO - PHYSIOLOGICAL MEASUREMENTS mcqs