Exit-Exam MCQ's for the course Artificial Intelligence-2023-Batch

1. What is an 'agent'?
   a) Perceives its environment through sensors and acting upon that environment through actuators
   b) Takes input from the surroundings and uses its intelligence and performs the desired operations
   c) A embedded program controlling line following robot
   d) All of the mentioned
   Ans:- d
2. An omniscient agent knows the actual outcome of its actions and can act accordingly; but omniscience is impossible in reality. Rational Agent always does the right thing; but Rationality is possible in reality.
   a) True
   b) False
   Ans: a(True)
3. The Task Environment of an agent consists of _____
   a) Sensors
   b) Actuators
   c) Performance Measures
   d) All of the mentioned
   Ans:- d
4. Categorize Crossword puzzle in Fully Observable / Partially Observable.
   a) Fully Observable
   b) partially Observable
   c) All of the mentioned
   d) None of the mentioned
   Ans:- a
5. An agent is composed of _____
   a) Architecture
   b) Agent Function
   c) Perception Sequence
   d) Architecture and Program
   Ans:- d
6. What is meant by agent's percept sequence?
   a) Used to perceive the environment
   b) Complete history of actuator
   c) Complete history of perceived things
   d) None of the mentioned
   Ans:-c

7. What is the rule of simple reflex agent?
   a) Simple-action rule
   b) Condition-action rule
   c) Simple & Condition-action rule
   d) None of the mentioned
   Ans:- b
8. In which agent does the problem generator is present?
   a) Learning agent
   b) Observing agent
   c) Reflex agent
   d) None of the mentioned
   Ans:- a
9. Which is used to improve the agents performance?
   a) Perceiving
   b) Learning
   c) Observing
   d) None of the mentioned
   Ans:- b
10. Which agent deals with happy and unhappy states?
   a) Simple reflex agent
   b) Model based agent
   c) Learning agent
   d) Utility based agent
   Ans:- d
11. An AI system is composed of?
   A. agent
   B. environment
   C. Both A and B
   D. None of the Above
   Ans:- c
12. What is the action of task environment in artificial intelligence?
   A. Problem
   B. Solution
   C. Agent
   D. Observation
   Ans:- a
13. Rationality is?
   A. being reasonable
   B. being sensible

C. having good sense of judgment.

D. All of the above

Ans:- d

14. Chess is example of which properties?

A. Discrete

B. Continuous

C. Episodic

D. Non-deterministic

Ans:- a

15. Which elements in agent are used for selecting external actions?

a. Perceive

b. Performance

c. Learning

d. Actuator

Ans:- b

16. Translate the following statement into FOL.

"For every a, if a is a philosopher, then a is a scholar"

a) ∀ a philosopher(a) scholar(a)

b) ∃ a philosopher(a) scholar(a)

c) All of the mentioned

d) None of the mentioned

Ans:- a

17. Which are needed to compute the logical inference algorithm?

a) Logical equivalence

b) Validity

c) Satisfiability

d) All of the mentioned

Ans:- d

18.**.** Which one of the following is needed to compute logical inference?

A. Logical Equivalence C. satisfiability

B. Validity D. All of the above

Ans:-D

19. Which form is called as a conjunction of disjunction of literals?

A. Conjunctive normal form C. Normal form

B. Disjunctive normal form D. All of the above

Ans:-A

20.What is the logical translation of the following statement?

"None of my students are punctual."

A. $\exists x(S(x) \wedge \neg P(x))$

B. $\exists x(\neg S(x) \wedge P(x))$

C. $\exists x(\neg S(x) \wedge \neg P(x))$

D. $\neg \exists x(S(x) \wedge P(x))$

Ans:-D

21. Suppose the predicate F(x, y, t) is used to represent the statement that ***person x can fool person y at time t.*** which one of the statements below expresses best the meaning of the formula $\forall x \exists y \exists t(\neg F(x, y, t))$?

A. Everyone can fool some person at some time

B. No one can fool everyone all the time

C. Everyone cannot fool some person all the time

D. No one can fool some person at some time

Ans:- B

22.Which one of the first order predicate calculus statements given below correctly express the following English statement?

"Tigers and lions attack if they are hungry or threatened".

(A) $\forall x\left[(\text{tiger}(x) \wedge \text{lion}(x)) \rightarrow \{(\text{hungry}(x) \vee \text{threatened}(x)) \rightarrow \text{attacks}(x)\}\right]$

(B) $\forall x\left[(\text{tiger}(x) \vee \text{lion}(x)) \rightarrow \{(\text{hungry}(x) \vee \text{threatened}(x)) \wedge \text{attacks}(x)\}\right]$

(C) $\forall x\left[(\text{tiger}(x) \vee \text{lion}(x)) \rightarrow \{\text{attacks}(x) \rightarrow (\text{hungry}(x) \vee \text{threatened}(x))\}\right]$

(D) $\forall x\left[(\text{tiger}(x) \vee \text{lion}(x)) \rightarrow \{(\text{hungry}(x) \vee \text{threatened}(x)) \rightarrow \text{attacks}(x)\}\right]$

Ans:-D

23. An algorithm A is admissible if

A. It is not guaranteed to return an optimal solution when one exists

B. It is guaranteed to return an optimal solution when one exists

C. It returns more solutions, but not an optimal one

D. It guarantees to return more optimal solutions

Ans:-B

24. Targetted marketing, Recommended Systems, and Customer Segmentation are applications in which of the following

A. Supervised Learning: Classification

B. Unsupervised Learning: Clustering
C. Unsupervised Learning: Regression
D. Reinforcement Learning

Ans:- B

25. Unsupervised learning is

A. learning without computers
B. problem based learning
C. learning from environment
D. learning from teachers

Ans:- C

26. Consider the following statement:

"While taking any decision, the agent must provide specific reasons based on which the decision was taken. And this reasoning can be done by the agent only if the agent has the capability of understanding the logic. "Among which of the following situations will the agent use and apply logic for solving the problem?

A. To solve real life problems
B. To play a game against a human in the same way as a human would do
C. To understand the environment variables
D. All of the above

Ans:- D

27. For propositional Logic, which statement is false?

A. The sentences of Propositional logic can have answers other than True or False.
B. Each sentence is a declarative sentence.
C. Propositional logic is a knowledge representation technique in AI.
D. Atomic sentences are indivisible syntactic elements consisting of single propositional symbol.

Ans:- A

28. What is admissible heuristic?

A). Never over estimates the cost to the goal. B) Always estimates the cost to the goal

C). shortest paths cost only considered D). Longest paths cost only considered

Ans:- A

29. The first order logic (FOL) statement ((R∨Q)∧(P∨¬Q)) is equivalent to which of the following?

A. ((R∨¬Q)∧(P∨¬Q)∧(R∨P))
B. ((R∨Q)∧(P∨¬Q)∧(R∨P))

C. ((R∨Q)∧(P∨¬Q)∧(R∨¬P))

D. ((RvQ)ʌ(Pv¬Q)ʌ(¬RvP))

Ans:- B

30. Which is not Familiar Connectives in First Order Logic?

(a) and (b) iff (c) or (d) not (e) either a or

Ans:- d

31. Let v(x) mean x is a vegetarian, m(y) for y is meat, and e(x, y) for x eats y. Based on these, consider the following sentences:

I. ∀x v(x) ⇔ (∀y e(x, y) ⇒ ¬m(y))

II. ∀x v(x)⇔ (¬(∃y m(y) ∧ e(x, y)))

III. ∀x (∃y m(y) ∧ e(x, y)) ⇔ ¬v(x)

One can determine that

a. Only I and II are equivalent sentences

b. Only II and III are equivalent sentences

c. Only I and III are equivalent sentence

d. I, II, and III are equivalent sentences

Ans:-d

32. Knowledge and reasoning also play a crucial role in dealing with _____ environment.

a. Completely Observable

b. Partially Observable

c. Neither a nor b

d. Both a and b

Ans:- d

33. Which is used to construct the complex sentences?

a) Symbols
b) Connectives
c) Logical connectives
d) All of the mentioned

Ans:- c

34. **Which of the following search method will expand the node that is nearest to the goal?**

(A). Best-first search

(B). Greedy best-first search

(C). A* search

(D). None of the mentioned

Ans:- b

35. Which of the following is the heuristic function of greedy best-first search?

(A). f(n) != h(n)

(B). f(n) < h(n)

(C). f(n) = h(n)

(D). f(n) > h(n)

Ans:- c

36. Which of the following search uses the problem-specific knowledge outside the definition of the problem?

(A). Informed search

(B). Depth-first search

(C). Breadth-first search

(D). Uninformed search

Ans:- a

37. Which of the following is helpful to increase the performance of the heuristic search?

(A). Quality of nodes

(B). Quality of heuristic function

(C). A simple form of nodes

(D). None of the mentioned

Ans:- b

38. Which of the following function will select the lowest expansion node at first for evaluation?

(A). Greedy best-first search

(B). Best-first search

(C). Depth-first search

(D). None of the mentioned

Ans:- b

39. Which of the following is the space complexity of Greedy search?

(A). O((B).

(B). O(bl)

(C). O(m)

(D). O(bm)

(E). None of these

Ans:- d

40. A* is optimal if h(n) is an allowable heuristic-that is, providing that h(n) under no circumstances underestimates the cost to reach the goal.

(A). True

(B). False

(C). Partially true

(E). None of these

Ans:-a

41. We can implement the Best First search with the help of which data structure

(A). Queue

(B). Stack

(C). Priority Queue

(D). Circular Queue

(E). None of these

Ans:- c

42. Uninformed search strategies are better than informed search strategies.

(A). True

(B). False

(C). Partially true

(E). None of these

Ans:- a

43. Which of the following is the evaluation function in the greedy technique?

(A). Heuristic function

(B). Path cost from the start node to the current node

(C). Path cost from the start node to current node + Heuristic cost

(D). Average of Path cost from the start node to the current node and Heuristic cost

(E). None of these

Ans:- a

44. Which algorithm is used in the Game tree to make decisions of Win/Lose?

a. Heuristic Search Algorithm

b. DFS/BFS algorithm

c. Greedy Search Algorithm

d. Min/Max algorithm

Ans:- d

45. Which rule is applied for the Simple reflex agent?

a. Simple-action rule

b. Simple &Condition-action rule

c. Condition-action rule

d. None of the above

Ans:- c

46. Which agent deals with the happy and unhappy state?

a. Utility-based agent

b. Model-based agent

c. Goal-based Agent

d. Learning Agent

Ans:- a

47. Rational agent always does the right things.

a. True
b. False

Ans:- True

48. Which term describes the common-sense of the judgmental part of problem-solving?

a. Values-based

b. Critical

c.Analytical

d.Heuristic

Ans:- d

49. The exploration problem is where_____.

a. Agent contains the knowledge of State and actions.

b. Agent does not contain the knowledge of State and actions.

c. Only actions are known to the agent.

d. None of the above

Ans:- b

50. In state-space, the set of actions for a given problem is expressed by the_____.

a. Intermediate States
b. Successor function that takes current action and returns next state
c. Initial States
d. None of the above

Ans:- b

51. The main function of problem-solving agent is to_____.

a. Solve the given problem and reach the goal
b. Find out which sequence of action will get it to the goal state.
c. Both a & b
d. None of the above

Ans:-c

52. In artificial Intelligence, knowledge can be represented as_____.

i. Predicate Logic

ii. Propositional Logic

iii. Compound Logic

iv. Machine Logic

a. Both I and II
b. Only II

c. Both II and III
d. Only IV

Ans:-a

53. **Which of the following artificial intelligence algorithm enforces a fixed depth limit on nodes?**
(A). Bidirectional search
(B). Depth-first search
(C). Iterative deepening search
(D). Depth-limited search
Ans:-c

54. Which of the following is the hypothesis states that it should be positive, but in fact it is negative?

(A). A consistent hypothesis

(B). A false negative hypothesis

(C). A false positive hypothesis

(D). A specialized hypothesis

(E). None of these

Ans:-C

55. Using logic to show and the reason we can show knowledge about the world with facts and rules.

(A). True

(B). False

(c). Partially True

Ans:- a

56. Using logic to show and the reason we can show knowledge about the world with facts and rules.

(A). True

(B). False

(c). Partially True

Ans:- a

57. Using logic to show and the reason we can show knowledge about the world with facts and rules.

(A). True

(B). False

(c). Partially True

Ans:- a

58. Using logic to show and the reason we can show knowledge about the world with facts and rules.

(A). True

(B). False

(c). Partially True

Ans:- a

59. The proposition symbols in AI are?

(A). true or false

(B) true or false or null

(c) True

(D) False

Ans:- a

60. Which of the following symbols in AI are logical symbols?

(A) Negation

(B) Conjunction

(C) Implication

(D) All of the above

Ans:- D

61. What are the different types of Artificial Intelligence approaches?

(A) Strong

(B) Weak

(C) Applied Approach

(D) All of the above

Ans:- d

62. The correct ways to solve a problem of state-space search are?

A. Forward from Initial state

B. Backward from the goal

C. both A and B

D. None of the above

Ans:- C

63. How does an AI agent interacts with its environment?

A. using sensors and perceivers

B. using only sensors

C. Using only perceivers

D. None of the above

Ans:- A

64. What is the work of Task Environment and Rational Agents?

A. problem and solution

B. solution and problem

C. observation and problem

D. observation and solution

Ams:- A

65. Out of the given options, which of the following algorithms uses the least memory?

A. DFS

B.BFS

C.both A and B

D. Cannot be compared

Ans:- A

66. Machines that try to imitate human intuition while handling vague information lie in the field of AI called?

A. functional logic

B. Boolean logic

C. fuzzy logic

D. Human logic

Ans:- C

67. The measure of performance of an AI agent is measured using?

A. Learning Agent

B.Changing Agent

C. Both A and B

D. None

Ans:- A

68. The things considered in the design of a learning element are?

A. Components

B.Feedback

C. Representation

D. All of the above

Ans:- D

69. For external action selection, which element is used in the agent?

A. Perceive

B. Performance

C. Actuators

D. None of the above

Ans:- B

70. Knowledge in AI can be represented as?

A. Predicate logic

B. Propositional Logic

C. Both A and B

D. None of the above

Ans:- C

71. Which of the following is helpful in determining the nature of the learning problem?
(A). Environment
(B). Feedback
(C). Problem
(D). All of the mentioned
Ans:- b

72. Which of the following will happen as the agent detects its interactions with the world?
(A). Learning
(B). Hearing
(C). Perceiving
(D). Speech
Ans:- a

73. Which changes the performance element so that it makes healthier decisions?
(A). Performance element
(B). Changing element
(C). Learning element
(D). None of these
Ans:- c

74. Which of the following is helpful for utility functions in the game-playing algorithms?
(A). Linear polynomial
(B). Weighted polynomial
(C). Polynomial
(D). Linear weighted polynomial
Ans:- d

75. The ___ is the AI language and representation expert.
A) civil engineer
B) meta dendral
C) Knowledge engineer
D) None of the above
Ans:- C

76. ___ learning involves the process of learning by example.
A) Chunking
B) Explanation
C) Inductive
D) Analogy
Ans:- C

77. ___ are the perceptual interface between robots and their environment.
A) Printers
B) Hard disks
C) Converters
D) None of the above
Ans:- D

78. Propositional logic deals with the determination of the ___ of the sentence.
A) Syntax
B) Truth
C) Semanties
D) Logic
Ans:- B

79. Which of the following statements are true?
i) Artificial Intelligence is the area of Electrical focusing on creating machines that can engage in behaviors that humans consider intelligent.
ii) AI is the part of computer science concerned with designing intelligent computer systems.
iii) AI is the study and creation of conventional computer systems.
iv)AI began to emerge as a separate field of study during the 1940s and 1950s when the computer became a commercial reality.
A) i and iii
B) i, ii and iii
C) ii and iv
D) ii and iii
Ans:- C

80. What is the frame in AI?

A. Data Type

B. Data Structure

C. A way of representing knowledge

D. None of the above

Ans:- C

81. A problem in a search space is defined by .....

A. goal state

B. initial state

C. intermediate state

D. None of the above

Ans:- C

82. Who is the Father of Artificial Intelligence

A. Alan Turing

B. Charless Babbage

C. John McCarthy

D. None

Ans:- C

85. What are the input and output of an NLP system?

A. Speech and noise
B. Speech and Written Text
C. Noise and Written Text
D. Noise and value

Ans : B

86. How many Components of NLP are there?

A. 2
B. 3
C. 4
D. 5

Ans : A

87. Which of the following includes major tasks of NLP?

A. Discourse Analysis
B. Automatic Summarization
C. Machine Translation
D. All of the above

Ans : D

87. Which of the following is used to mapping sentence plan into sentence structure?

A. Text planning
B. Sentence planning
C. Text Realization
D. None of the Above

Ans : C

88. Parts-of-Speech tagging determines _____

A. part-of-speech for each word dynamically as per meaning of the sentence
B. part-of-speech for each word dynamically as per sentence structure
C. all part-of-speech for a specific word given as input
D. All of the above

Ans : D

89. Many words have more than one meaning; we have to select the meaning which makes the most sense in context. This can be resolved by _____

A. Fuzzy Logic
B. Shallow Semantic Analysis
C. Word Sense Disambiguation
D. All of the above

Ans : C

90. Which of the following is merits of Context-Free Grammar?

A. simplest style of grammar
B. They are highly precise.
C. High speed
D. All of the above

Ans : A

91. "He lifted the beetle with red cap." contain which type of ambiguity ?

A. Lexical ambiguity
B. Syntax Level ambiguity
C. Referential ambiguity
D. None of the Above

Ans : B

92. "I am tired." Contain which type of ambiguity ?

A. Lexical ambiguity
B. Syntax Level ambiguity
C. Sementic ambiguity
D. None of the Above

Ans : D

93. Given a sound clip of a person or people speaking, determine the textual representation of the speech.

A. Text-to-speech
B. Speech-to-text
C. Both A and B
D. None of the Above

Ans : B

94. Best First Search is a combination of ___ searches.
A. DFS and Greedy Search Algorithm
B. depth-first and breadth-first
C. Graph and Tree search
D. None of the above

Ans:- B

95. What is Machine Translation?

A. Converts one human language to another
B. Converts human language to machine language
C. Converts any human language to English
D. Converts Machine language to human language

Ans : A

96.What is the condition of variables in first-order literals?
A. Existentially quantified
B. Universally quantified
C. Both A and B
D. None of the mentioned

Ans:- B

97. Which of the mentioned point are not valid with respect to a Propositional Logic?

A. In propositional Logic, each sentence is a declarative sentence
B. In propositional logic, the sentence can have answers other than True or False
C. Propositional Logic is a type of knowledge representation in AI
D. None of the above

Ans:- C

98. The steps to solve quadratic equation are expressed as a
A. Procedural knowledge
B. Relational knowledge
C. Heuristic knowledge
D.None of the choices
Ans:- A

99. The idea of AI oriented from **—**
(a) Turing test
(b) chemical test
(c) biological test
(d) None of the choices
Ans:- a

100. AI Agents are **—**
(a) Autonomous
(b) Adaptive
(c) both 'a' and 'b'
(d) None of the choices
Ans:- C