BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Diploma in Computer Science & Engineering
Course Name – Artificial Intelligence
Course Code - DCSE602
(Semester VI)

Time allotted : 1 Hrs.25 Min. **Full Marks : 70**

[The figure in the margin indicates full marks.]

Group-A

(Multiple Choice Type Question) 1 x 70=70

Choose the correct alternative from the following :

(1) What is Artificial intelligence?
- a) Putting your intelligence into Computer
- b) Programming with your own intelligence
- c) Making a Machine intelligent
- d) Playing a Game

(2) Which instruments are used for perceiving and acting upon the environment?
- a) Perceiver
- b) Sensors and Actuators
- c) Sensors
- d) None of the mentioned

(3) What is the rule of simple reflex agent
- a) Simple-action rule
- b) Condition-action rule
- c) Both a & b
- d) None of the mentioned

(4) Which is used to improve the agents performance?
- a) Perceiving
- b) Learning
- c) Observing
- d) None of the mentioned

(5) Where the next state and the action of an agent of the environment is fully obtained based on the current state?
- a) Deterministic environment
- b) Episodic environment
- c) Non-deterministic environment
- d) None of these

(6) When agents select actions on the basis of preference for each state, called_____.
- a) Utility based agents
- b) Model based reflex agents
- c) Goal based agents
- d) None of these

(7) Driving is belongs to which category of environment?
- a) Discrete
- b) Continuous
- c) Static
- d) Dynamic

(8) Where one real and other artificial agents are simultaneously tested on the basis of equal ground?
- a) Utility based Test environment
- b) Turing Test environment
- c) Model based Test environment
- d) None of these

(9) The Set of actions for a problem in a state space is formulated by a _____ .

a) Intermediate state
b) Initial state
c) Successor function, which takes current action and returns next immediate state
d) None of these

(10) To represent state space diagram of 8-puzzle problem in AI, possible moves are:

a) Left and Right
b) Right and Up
c) Up and Down
d) Left, right, up and down

(11) Adversarial search uses which type of agent?

a) Co-operative multi-agen
b) Co-operative multi-agen
c) Co-operative single-agent
d) Competitive single-agent

(12) Rubik's Cube is_____.

a) Single agent path finding problems
b) Multi agent path finding problems
c) Both of these
d) None of these

(13) The summation of initial state and goal state make a_____.

a) Problem Space
b) Problem instance
c) Problem Space Graph
d) None of these

(14) Which agent enables the deliberation about the computational entities and actions?

a) Hybrid
b) Reflective
c) Relational
d) None of the mentioned

(15) Web Crawler is a kind of_____.

a) Intelligent goal-based agent
b) Problem-solving agent
c) Simple reflex agent
d) Model based agent

(16) Forward reasoning is _____ .

a) Data driven
b) Goal driven
c) Knowledge driven
d) Resolution driven

(17) Which search algorithm imposes a fixed depth limit on nodes?

a) Depth-limited search
b) Depth-first search
c) Iterative deepening search
d) Bidirectional search

(18) Which search implements stack operation for searching the states?

a) Depth-first search
b) Breadth-first search
c) Bidirectional search
d) None of the mentioned

(19) _____ is an algorithm, a loop that continually moves in the direction of increasing value that is uphill

a) Up-Hill Search
b) Hill-Climbing
c) None of these
d) Reverse-Down- Hill search

(20) Best-First search can be implemented using _____ data structure

a) Queue
b) Stack
c) Priority Queue
d) Circular Queue

(21) Which search is implemented with an empty first-in- first-out queue?

a) Depth-first search
b) Breadth-first search
c) Bidirectional search
d) None of the mentioned

(22) Adversarial search problems uses _____

a) Competitive Environment
b) Cooperative Environment
c) Neither a nor b
d) All of these

(23) DFS is _____ efficient and BFS is _____ efficient

a) Space, Time
b) Time, Space
c) Time, Time
d) Space, Space

(24) To which depth does the alpha-beta pruning can be applied?

a) 10 b) 15
c) 5 d) Any depth

(25) Which search is similar to minimax search?

a) Depth-first search b) Breadth-first search
c) Hill climbing d) None of these

(26) Value of utility function for representing state space diagram for tic-tac-toe are

a) 1,2,0 b) 1,-1,0
c) 1,1,1 d) -1,-1,0

(27) BFS uses which data structure?

a) Stack b) Queue
c) Priority queue d) Linked list

(28) The adjective “first-order” distinguishes first-order logic from _____ in which there are p redicates having predicates or functions as arguments, or in which one or both of predicate quanti fiers or function quantifiers are permitted.

a) Representational Verification b) Representational Adequacy
c) Higher Order Logic d) Inferential Efficiency

(29) Mathematical representation of space requirement for storing nodes in Breadth-First Search____ _____.

a) Exponential b) Logarithmic
c) Geometric progression d) None of these

(30) A search technique where searches is done on the basis of forward and backward from initial stat e and goal state respectively till both meet to identify a common state_____.

a) Bidirectional search b) Breadth- first search
c) Depth- first search d) None of these

(31) The deficiency in uniform Cost Search_____.

a) It has no information on goal location b) It does not explore options in every direction.
c) It is not optimal d) None of these

(32) A search technique that combines the strengths of uniform-cost search and greedy search_____ ___.

a) A* Tree Search b) A* graph Search
c) Hill climbing search d) None of these

(33) Space complexity for Uniform Cost search_____.

a) (b: no. of node, d: depth) b) (b: no. of node, d: depth)
c) (b: no. of node, d: depth) d) (b: no. of node, d: depth)

(34) A set of objects whose state must satisfy a number of constraints or limitation belong to_____ ___problem.

a) Constraints Satisfaction Problems b) Uninformed Search Problems
c) Local Search Problems d) All of the mentioned

(35) Value of alpha and beta in the alpha-beta pruning_____

a) Alpha = max b) Beta = min
c) Beta = max d) Both Alpha = max & Beta = min

(36) Flexible Constraint Satisfaction Problems relax on _____.

a) Constraints b) Current State
c) Initial State d) Goal State

(37) Fuzzy logic is a form of _____

a) Two-valued logic b) Crisp set logic
c) Many-valued logic d) Binary set logic

(38) Which search is equal to minimax search but eliminates the branches that can’t influence the fina

l decision?

a) Depth-first search
b) Breadth-first search
c) Alpha-beta pruning
d) None of the mentioned

(39) “John is very intelligent”. This statement can be completely expressed in _____

a) FOPL
b) Fuzzy logic
c) Default logic
d) Propositional logic

(40) Backward reasoning is _____

a) Data driven
b) Goal driven
c) Knowledge driven
d) Resolution driven

(41) A _____ is used to demonstrate, on a purely syntactic basis, that one formula is a logical co nsequence of another formula.

a) Deductive Systems
b) Inductive Systems
c) Reasoning with Knowledge
d) Search Based Systems

(42) How many logical connectives are there in artificial intelligence?

a) 2
b) 3
c) 4
d) 5

(43) Which is also called single inference rule?

a) Reference
b) Resolution
c) Reform
d) None of these

(44) The room temperature is hot. Here the hot (use of linguistic variable is used) can be represented by _____

a) Fuzzy set
b) Crisp set
c) Both fuzzy and crisp set
d) None of these

(45) Semantic Networks is

a) A way of representing knowledge
b) Data structure
c) Data type
d) None of these

(46) Frames is

a) A way of representing knowledge
b) Data structure
c) Data type
d) None of these

(47) Defuzzification is process of conversion of

a) Fuzzy set to crisp set
b) Crisp to fuzzy set
c) Both a. and b.
d) None of these

(48) Forward chaining is a

a) Type of knowledgebase
b) Type of planning
c) Type of learning
d) Method of reasoning

(49) Knowledge based inductive learning(KBIL) is example of

a) Inductive learning
b) Deductive learning
c) Supervised learning
d) Unsupervised learning

(50) Explanation-Based Learning(EBL) is example of

a) Inductive learning
b) Deductive learning
c) Supervised learning
d) Unsupervised learning

(51) Clustering is a classic example of

a) Semi-supervised learning models.
b) Reinforcement learning models
c) supervised learning models.
d) unsupervised learning models.

(52) Regression is classic example of

a) Semi-supervised learning models.
b) Reinforcement learning models
c) supervised learning models.
d) unsupervised learning models.

(53) Association is classic example of

a) Semi-supervised learning models.
b) Reinforcement learning models
c) supervised learning models.
d) unsupervised learning models.

(54) FOPL stands for

a) First-Order Prolog Logic
b) First-Order Python Logic
c) First-Order Predicate Loop
d) First-Order Predicate Logic

(55) _____transforms the fuzzy set obtained by the inference engine into a crisp value.

a) defuzzification Module
b) knowledge base
c) both of these
d) None of these

(56) IF-THEN rules provided by experts is stored in

a) defuzzification Module
b) knowledge base
c) Expert system
d) None of these

(57) A teacher use _____for addressing declarative knowledge.

a) Evaluating mathematical expressions
b) How to write definitions to vocabulary words
c) Both of these
d) None of these

(58) NLP (with respect of AI) stands for

a) Natural Linear Processing
b) Natural Language Processing
c) Natural Linear Programming
d) Natural Language Programming

(59) How many components does Natural Language Processing (NLP) has?

a) 2
b) 3
c) 4
d) 5

(60) Text planning is involved in

a) Natural Language Understanding
b) Natural Language Generation
c) Both a and b
d) None of these

(61) A Horn clause is a clause with _____ .

a) at most one negative literal
b) at most two negative literal
c) at most one positive literal
d) at most two positive literal

(62) Pattern recognition systems such as face recognition belongs to_____.

a) Expert Systems
b) Natural Language Processing
c) Neural Networks
d) Robotics

(63) Flight-tracking system is application of_____.

a) Expert Systems
b) Natural Language Processing
c) Neural Networks
d) Robotics

(64) Treating the word “board” as noun or verb is example of_____.

a) Lexical ambiguity
b) Syntax Level ambiguity
c) Referential ambiguity
d) None of these

(65) A grammar that consists rules with a single symbol on the left-hand side of the rewrite rules____

a) Context sensitive grammar
b) Context free grammar
c) Pragmatic analysis
d) Semantic Analysis

(66) Expert system without knowledge base called_____.

a) Shells
b) Tools
c) user interface
d) none of these

(67) The process of completing a specific task by the brain which incrementally orders actions on de mand is referred as _____.

a) Planning problem
b) Partial order planning
c) Total order planning
d) Both Planning problem & Partial order planning

(68) Which of the following option is true?

a) If the Sun is a planet, elephants will fly
b) 3 +2 = 8 if 5-2 = 7
c) 1 > 3 and 3 is a positive integer
d) -2 > 3 or 3 is a negative integer

(69) What is the value of x after this statement, assuming initial value of x is 5? 'If x equals to one the n x=x+2 else x=0'.

a) 1
b) 3
c) 0
d) 2

(70) Let P: I am in Delhi. , Q: Delhi is clean. ; then q ^ p(q and p) is:

a) Delhi is clean and I am in Delhi
b) Delhi is not clean or I am in Delhi
c) I am in Delhi and Delhi is not clean
d) Delhi is clean but I am in Mumbai