

	To be filled in by candidate by ball-point pen only	OMR Sl. No.
	Roll No. _____	_____
Signature of Invigilator	Declaration : I have read and understood the instructions given below.	
Time of Examination	Full Signature of Candidate	Full Marks : 80/50 Time : 1 hour
Date of Examination	Name of Candidate	

Number of Questions in the Booklet } **50/40**

UU 6th Semester Examination, 2020

INSTRUCTIONS TO CANDIDATES

- Immediately after getting the booklet read instructions carefully mentioned on the front and back page of the Question Booklet. Do not open the seals unless asked by the Invigilator.
- Write your Roll No., OMR Response Sheet No., in the specified places given above and put your signature.
- Write the subject code of the booklet in your OMR Sheet.
- Make all entries in the OMR Response Sheet as per the given instructions; otherwise OMR Response Sheet will not be evaluated.
- After opening the seals, ensure that the Question Booklet contains total no. of pages as mentioned above and printing of all the **50 / 40** questions are proper. If any discrepancy is found, inform the invigilator within **15** minutes and get the correct Question Booklet.
- For each question in the Question Booklet choose the correct option from the given four alternatives and darken the same circle in the OMR Response Sheet with Black or Blue ball-point pen.
- Darken the circle of correct answer properly; otherwise answers will not be evaluated. The candidate will be fully responsible for it.
- If more than one option is darkened for a particular question, then it will be treated as wrong answer.
- After completion of the examination, only OMR Response Sheet is to be handed over to the invigilator.

THERE IS NO NEGATIVE MARKING FOR WRONG ANSWER

COMPUTER SCIENCE (Core-13)

(Answer any 40 questions)

- 1 In 1950, Alan Turing conducted the “Turing Test”, which of the following is not a part of that test?
 - (A) The Human Expert
 - (B) The Interrogator
 - (C) The Computer System
 - (D) None of the above
- 2 In Depth First Search (DFS), the candidates are inspected in which Order?
 - (A) First-In-First-Out (FIFO)
 - (B) Last-In-First-Out (LIFO)
 - (C) Both of these
 - (D) None of the above
- 3 In Breadth First Search (BFS), the candidates are inspected in which order?
 - (A) First-In-First-Out
 - (B) Last-In-First-Out
 - (C) Both of these
 - (D) None of the above
- 4 Iterative Deepening Search (IDS) is similar to _____, with some cut-off or bound.
 - (A) BFS
 - (B) DFS
 - (C) Both of these
 - (D) None of the above
- 5 The Best-First Search Technique can store _____, so it can recover from the failure of its strategy.
 - (A) Open List
 - (B) Closed list
 - (C) Both Open and Closed List
 - (D) None of the above
- 6 In the evaluation function $f(n) = g(n) + h(n)$, where $g(n)$ represents _____.
 - (A) The actual cost from Start to Current node.
 - (B) Heuristic Cost from Current to Goal node.
 - (C) Total Cost from Start to Goal node.
 - (D) None of the above
- 7 Cryptarithmic problem is an example of _____.
 - (A) Constraint Satisfaction Problem
 - (B) Natural Language Processing
 - (C) Both of these
 - (D) None of the above
- 8 MINIMAX Search Procedure operates as _____ search.
 - (A) Breadth First
 - (B) Depth First
 - (C) Uniform Cost
 - (D) None of the above

- 9 In Alpha-Beta pruning, $\alpha = \underline{\hspace{1cm}}$ and $\beta = \underline{\hspace{1cm}}$.
- (A) Upper and Lower
 (B) Lower and Upper
 (C) Upper and Not Defined
 (D) None of the above
- 10 Unlike A*, the IDA* does not maintain _____ List.
- (A) Open List
 (B) Closed list
 (C) Both Open and Closed List
 (D) None of the above
- 11 In Propositional Logic, $\neg(\alpha \wedge \beta) \equiv (\neg\alpha \vee \neg\beta)$ is known as _____ Law.
- (A) DeMorgan's Law
 (B) Exportation
 (C) Absurdity
 (D) None of the above
- 12 If it is given that "Rahul has Covid-19 then Rahul has Fever". So, if Rahul has Fever, Rahul has Covid-19. This type of well-known rule is known as _____.
- (A) Modus Ponens
 (B) Modus Tollens
 (C) Hypothetical Syllogism
 (D) Constructive Dilemma
- 13 Skolemization is the process of eliminating _____ from Logical Statement.
- (A) Universal Quantifiers.
 (B) Existential Quantifiers.
 (C) Both Universal and Existential Quantifiers.
 (D) None of these
- 14 Horn clauses are closed under resolution i.e. if you resolve two Horn clauses; you get back a Horn clause.
- (A) True
 (B) False
 (C) Either True or False
 (D) None of the above
- 15 In Propositional Logic, what is the Full Form of CNF?
- (A) Corpus-Nour Form
 (B) Constraint Normal Form
 (C) Conjunctive Normal Form
 (D) None of the above
- 16 In FOL, two literals cannot be unified in what conditions?
- (A) If, their Initial Predicate Values mismatched.
 (B) If, the number of arguments mismatched.
 (C) If any of these conditions satisfied.
 (D) None of these
- 17 $\forall x: \forall y: \forall z: [\neg \text{Roman}(x) \vee \neg \text{Knows}(x, \text{Marcus})] \vee [\text{hate}(x, \text{Caesar}) \vee (\neg \text{hate}(y, z) \vee \text{crazy}(x, y))]$. Is in which normal form?
- (A) Constraint Normal Form
 (B) Conjunctive Normal Form
 (C) Prenex Normal Form
 (D) None of the above
- 18 Resolution is based on the principle of _____.
- (A) Contradiction
 (B) Satisfaction
 (C) Both a and b
 (D) None of the above

- 19 In the Resolution tree, when two-parent clauses are resolved, the resulting Clause is known as ____.
- (A) Result
(B) Resolvent
(C) Resolution
(D) None of the above
- 20 If we translate “Everyone is Loyal to someone”. Into FOL, then it will be ____.
- (A) $\forall x:\rightarrow y: loyalto(x,y)$
(B) $\exists x:\rightarrow y: loyalto(x,y)$
(C) Both (a) and (b)
(D) None of the above
- 21 PDDL is a language, which is the acronym of _____. Planning Domain Definition Language
- (A) Planning Domain Definition Language
(B) Planning Definition and Definite Language
(C) Both (a) and (b)
(D) None of the above
- 22 GRAPHPLAN is an _____.
- (A) An algorithm
(B) A Graph
(C) Both (a) and (b)
(D) None of the above
- 23 STRIPS are an approach to solve _____ planning Problems.
- (A) Nonlinear
(B) Goal Stack
(C) Constraint Satisfaction
(D) None of the above
- 24 In Block World Problem, for the operation PUTDOWN(X), the precondition will be _____.
- (A) Holding(X)
(B) Arm-Empty
(C) On-Table(X)
(D) None of the above
- 25 TWEAK is a category of _____ Planning.
- (A) Goal-Stack Planning
(B) Nonlinear Planning
(C) Linear Planning
(D) None of the above
- 26 Hierarchical Planning can be achieved by _____ approach of problem solving.
- (A) STRIPS
(B) TWEAK
(C) ABSTRIPS
(D) None of the above
- 27 1. Multiagent Planning is required, when _____.
- (A) There exist multiple agents in environment.
(B) The problem cannot be solved in other Planning approach.
(C) Both (a) and (b)
(D) None of the above
- 28 HTN Planner can create very large plans required by many real-world applications. Here HTN is the acronym of _____.
- (A) High Degree transition Network
(B) Hierarchical Task Network
(C) Hierarchical Truth Network
(D) None of the above

- 29 _____ is a variant of Truth Maintenance System, where each sentence in the knowledge base is annotated with a justification consisting of the set of sentences from which it was inferred.
- (A) JTMS
 - (B) ATMS
 - (C) CTMS
 - (D) None of the above
- 30 An _____ planning agent uses execution monitoring and splices in repairs as needed to recover from unexpected situations, which can be due to nondeterministic actions, exogenous events or incorrect models of the environment.
- (A) (a) Transition
 - (B) (a) Online
 - (C) (a) Abstraction
 - (D) None of the above
- 31 A **decision tree** represents a function that takes _____ as input and returns a “decision”- a single output value.
- (A) Vector of attribute values.
 - (B) Set of condition.
 - (C) Set of function.
 - (D) None of the above
- 32 Which of the following is not learning?
- (A) Unsupervised Learning
 - (B) Semi-Supervised Learning.
 - (C) Supervised Learning.
 - (D) None of the above
- 33 Decision Tree Pruning is used to combat _____.
- (A) Over fitting.
 - (B) Under fitting
 - (C) Both of these.
 - (D) None of the above
- 34 Artificial Neural Network is comprised of multiple _____.
- (A) Nodes
 - (B) Edges
 - (C) perceptron
 - (D) None of the above
- 35 Which of the following is not a variant of a Gradient Descent Algorithm?
- (A) Stochastic Gradient Descent.
 - (B) Batch Gradient Descent.
 - (C) Mini Batch Gradient Descent.
 - (D) None of the above
- 36 If a neural network with all the inputs connected directly to the outputs, then it is called _____ Network.
- (A) Perceptron Network.
 - (B) Convolutional Neural network.
 - (C) Recurrent Neural Network.
 - (D) None of the above
- 37 1. The back-propagation algorithm implements _____ in parameter space to minimize the output error.
- (A) Activation function
 - (B) Gradient Descent
 - (C) Both of these
 - (D) None of the above

- 38 SVM is a classifier, which is acronym of _____.
- (A) Supplier Virtual Machine.
 - (B) Support Virtual Machine.
 - (C) Support Vector Machine.
 - (D) None of these
- 39 In Reinforcement Learning, MDP stands for _____.
- (A) (a) Monte-Carlo Design Process
 - (B) (a) Markov Decision Process
 - (C) (a) Monte-Carlo Decision Process
 - (D) None of the above
- 40 In Q-learning, Q is a function of _____ and _____ pairs to learned values.
- (A) State and Action
 - (B) State and Reward
 - (C) Reward and Action
 - (D) Action and Reward
- 41 Parsing is the process of analysing a string of words to uncover its phrase structure, according to the rules of grammar and Parsing is of _____ Types.
- (A) Two
 - (B) Three
 - (C) Four
 - (D) None of the above
- 42 ATN is a Top-Down Parsing procedure, which is an acronym of _____.
- (A) Adversarial Transition Network
 - (B) Augmented Transition Network
 - (C) Automated Transition Network
 - (D) None of the above
- 43 Lexical Analysis is a part of _____ .
- (A) Syntactic Analysis.
 - (B) Morphological Analysis.
 - (C) Semantic Analysis.
 - (D) None of the above
- 44 CYK Algorithm is used for parsing of _____.
- (A) Context-Free Grammar
 - (B) Context-Sensitive Grammar
 - (C) Context-Based Grammar
 - (D) None of these
- 45 An n-gram model is defined as a _____ of order $n - 1$.
- (A) Markov chain
 - (B) Monte-Carlo
 - (C) Anyone of the above
 - (D) None of the above
- 46 The earliest Information Retrieval systems worked on _____.
- (A) Boolean keyword model
 - (B) Conceptual Parsing
 - (C) Both of these
 - (D) None of the above
- 47 Which of the following is not a Steps of Natural Language Processing?
- (A) Syntactic Analysis
 - (B) Pragmatic Analysis
 - (C) Discourse Integration
 - (D) None of the above

- 48 Which of the Following model is not required to do Disambiguation properly?
- (A) Acoustic Model
 - (B) Mental Model
 - (C) Language Model
 - (D) None of the above
- 49 When a word has more than one meaning in a sentence, it is called _____ Ambiguity.
- (A) Lexical
 - (B) Syntactic
 - (C) Both Lexical and Syntactic
 - (D) None of the above
- 50 In a certain rule, if $A X B \rightarrow A Y B$ i.e. the right-hand side must contain at least as many symbols as the left-hand side, then this type of grammar is known as _____.
- (A) Context Free Grammar
 - (B) Context Sensitive Grammar
 - (C) Regular Grammar
 - (D) None of the above

