CS607-Artificial Intelligence

Solved MCQS for Midterms papers

Solved by JUNAID MALIK and Team

AL-JUNAID INTITUTE OF GROUP

1. General games involves_____.
    a. single-agent
    b. multi-agent
    c. only single-agent and multi-agent Page No. 62 (HANDOUTS)
    d. neither single-agent nor multi-agent

2.Adversarial search problems uses_____.
    a. competitive environment Page No. 62 (HANDOUTS)
    b. cooperative environment
    c. neither competitive nor cooperative environment
    d. an only competitive and cooperative environment

2. Genetic algorithm start with the population of randomly generated, attempted solutions to a problem and repeatedly do the following except___.
    a. evaluate each attempted solutions
    b. keep the best solutions
    c. produce next generation using inheritance and mutation.
    d. perform non parallel search Page No. 77

3. What is Artificial Intelligence?
    a. Putting your intelligence into Computer
    b. Programming with your intelligence
    c. Making a Machine intelligent My Point of View
    d. Playing a Game

4. To create intelligent machines we first need to understand how the real _____.
    a. introspection of mind
    b. psychological experiment
    c. brain functions Page No. 14
    d. human body works

5. The Breadth-First Search traversal of a graph will result into?
    a. Linked List
    b. Tree Page No. 28 (HANDOUTS)
    c. Graph with back edges
    d. Arrays

6. In Breadth-First Search, how many times a node is visited?
    a. Once

b. Twice

c. Equivalent to number of in-degree of the node GOOGLE

d. Thrice

7. R1/XCON expert system was developed by?

a. Digital Computer Corporation

b. Digital Equipment Corporation Page No. 112 (HANDOUTS)

c. Computer accessories company

d. DELL

8. In Depth-First Search, how many times a node is visited?

a. Once

b. Twice

c. Equivalent to number of in degree of the node GOOGLE

d. Thrice

9. Every graph can be converted into a_____.

a. Tree Page No. 22 (HANDOUTS)

b. statement

c. problem

d. repeated cycle

10. Performance of an expert system is_____as compared to a human expert.

a. High Page No. 113 (HANDOUTS)

b. Low

c. Medium

d. Average

11. A function by which we can tell which board position is nearer to our goal is called.

a. Alternative function

b. Recursive function

c. Best function

d. Fitness function Page No. 83 (HANDOUTS)

12. A knowledge structure that relates some known information to other information that can be concluded or inferred to be true is represented as

_____.

a. object

b. attribute

c. value

d. rule **Page No. 95 (HANDOUTS)**

13.Hit and trial is a classical approach to solve the_____problems easily.

a. Trivial Page No. 15 (HANDOUTS)

b. medium

c. complex

d. structured

14. Graphs and Networks allow_____between objects/entities to be incorporated.

a. Relationships Page No. 92 (HANDOUTS)

b. pictures

c. representation

d. communication

15. In Genetic algorithm_____has the same notion of having something or some attribute from a parent while refers to a small random change.

a. inheritance, mutation Page No. 77 (HANDOUTS)

b. DFS, BFS

c. A*, Dynamic programing

d. subtraction, multiplication

16. Back-propagation learning algorithm was invented by_____.

a. Bryson and Ho Page No. 12 (HANDOUTS)

b. John McCarthy

c. Marvin Minsky

d. Alan Turing

17. The simple idea behind_____is that if we can reach a specific node through more than one different paths then we shall take the path with the minimum cost.

a. Dynamic programming Page No. 55 (HANDOUTS)

b. Estimates

c. Progressive deepening

d. Beam search

18. Which of the following is NOT one of the steps of simple search algorithm?

a. Initialize priority queue.

b. Check if the priority queue is empty.

c. If node picked from priority queue is goal node then return.

d. Copy visited queue to priority queue. Page No. 24

19._____is the type of knowledge that can be described as the knowledge about knowledge.

a. Declarative knowledge
b. Uncertain knowledge
c. Meta knowledge Page No. 90 (HANDOUTS)
d. Fuzzy knowledge

20. The rules that define how conflict resolution will be used, and how other aspects of the system itself will run, are called_____.
a. Meta rules
b. Conflict resolution rules Page No. 125 (HANDOUTS)
c. Forward chain rules
d. backward chain rules

21. Identify the TRUE statement regarding "Heuristics":
a. Heuristics always give us good guess to reach to goal state.
b. Heuristics don't always give us good guess to reach to goal state. Page No. 37 (HANDOUTS)
c. Heuristics never give us good guess to reach to goal state.
d. Both "heuristic" and "algorithm" are same thing.

22. The ability to understand things without explicitly programmed a computer is called?
a. Artificial Intelligence google/www.sciencedirect.com
b. Deep learning
c. Machine learning
d. Fuzzy logic

23. "In context of Hill climbing algorithm, a person may reach the portion of a mountain which is totally flat, whatever step he takes gives him no improvement in height hence he gets stuck." The above statement refers to:
a. Foothill problem
b. Plateau problem Page No. 40 (HANDOUTS)
c. Ridge problem
d. Slope problem

24. To implement simple search algorithm as breadth first search, we use the formula given below and give priority to element with_____P(n) value where: P(n) =height(n)
a. Minimum Page No. 28 (HANDOUTS)
b. Maximum
c. Average

d. Absolute

25. The conference that launched the AI revolution in 1956 was held at?

a. Harvard

b. Dartmouth Page No. 10 (HANDOUTS)

c. New York

d. Stanford

26. Cost of a human expert is_____as compared to an expert system

a. High Page No. 113 (HANDOUTS)

b. Low

c. Medium

d. Average

27. An expert system models the following aspect(s) of human expert

a. Operators

b. Implications

c. Knowledge and reasoning Page No. 111 (HANDOUTS)

d. Operations

28. The machine has_____, it would have used its Knowledge to counter for this new situation in its environment.

a. strong intelligence Page No. 9 (HANDOUTS)

b. weak intelligence

c. efficient algorithms

d. inference system

29._____AI actually tries to recreate the functions of the inside of the brain as opposed to simply emulating behavior

a. Weak

b. Strong Page No. 8 (HANDOUTS)

c. Weak and Strong

d. Intermediate

30. "In context of Hill climbing algorithm, you might just reach local maxima and think that you have reached the global maxima, so getting stuck in the middle of searching the solution space." The above statement refers to:

a. Foothill problem Page No. 39 (HANDOUTS)

b. Plateau problem

c. Ridge problem AL-JUNAID INSTITUE OF GROUP

d. Slope problem

31. Solving the problem through genetic algorithm_____on the number of iterations is usually used to end the process in finite time.

a. upper limit **Page No. 86 (HANDOUTS)**

b. lower limit
c. middle limit
d. no limit

32. Implication can also be represented as(A → B) = ?

a. ~A v B **Page No. 118 (HANDOUTS)**

b. ~A ∧B
c. A v ~B
d. A ∧~B

33. The ability to learn and recognize things automatically called?

a. Fuzzy logic
b. Intelligence **Page No. 6 (HANDOUTS)**
c. Problem solving
d. Defining the problem

34._____can be viewed as the processor in an expert system.

a. Inference engine **Page No. 117 (HANDOUTS)**
b. Working memory
c. Knowledge base
d. System memory

36. IF A THEN B
This can be considered to have a similar logical meaning as the following:

a. A -> B **Page No. 99 (HANDOUTS)**
b. A<-> B
c. A <- B
d. B<-> A AL-JUNAID INSTITUE OF GROUP

37. If an arrow points from node "A" to Node "B" then, node "B" will be called:

a. Child of node "A" **Page No. 21 (HANDOUTS)**
b. Parent of node "A"
c. Branching node "A"
d. Fan-out of node "A"

38. CLIPS stands for:

a. C Language Integrated Production System Page No. 133 (HANDOUTS)
b. C# Language Integrated Production System
c. COBOL Language Integrated Production System
d. C Linguist Integrated Production System

39. Some essential components of problem solving are Problem Statement, _____, Solution Space and Operators.
a. Complex State
b. Initial State
c. Intermediate
d. Goal State Page No. 17 (HANDOUTS)

40. The simplest way to perform_____is to combine the head of one individual to the tail of the other.
a. mutation
b. crossover Page No. 82 (HANDOUTS)
c. DFS
d. BFS

41. Which of the following is true?
a. A graph may contain no edges and many vertices
b. A graph may contain many edges and no vertices
c. A graph may contain no edges and no vertices
d. A graph may contain no vertices and many edges

42. How many types of rules are there in formal knowledge representation?
a. 4 AL-JUNAID INSTITUE OF GROUP
b. 5
c. 6
d. 7 Page No. 96, 97 (HANDOUTS)

43. Variation in the offspring's(children) of the individuals are due to_____.
a. Mutation
b. Inheritance
c. Both mutation and inheritance Page No. 77 (HANDOUTS)
d. crossover

44. The symbol for the existential quantifier is represented as_____. It is also read as “there exists”.

a. ∀

b. ∃ page 100 HO

c. ⊕

45. Which of the following, is not a component of an expert system?

a. Inference engine
b. Knowledge-base
c. User interface

d. Template page 116 HO

46. In CLIPS, the Defrule construct is used to add_____.

a. **Rules page 135 HO**
b. facts
c. principles
d. agenda

47. In_____search, rather than trying all possible search paths, we focus on paths that seem to be getting closer to goal state using some kind of "guide".

a. **Heuristic page 37 HO**
b. Uninformed
c. Depth
d. Progressive deepening

48. Which of the following is not considered being trait(s) of an expert?

a. They possess specialized knowledge in certain area
b. They possess experience the given area
c. They can provide, upon elicitation, an explanation of their decisions

d. They possess long term memory page 111 HO

49. Which of the following is NOT one of the expert systems?

a. Dendral
b. Mycin
c. R1/XCON AL-JUNAID INSTITUE OF GROUP

d. XOR page 112 HO

50. The formulae (∃x) (Person (x) ∧ father (x, Ahmed)) can be translated in simple words and read as.

a. **there exists some person, x who is Ahmed's father. Page 100 HO**
b. for all person, x who is Ahmed's father.
c. there exists some person, x who is Ahmed's daughter.

d. for all person, x who is Ahmed's daughter.

51._____are able to override the normal rules in expert systems.

a. **Meta rules page 96 HO,**
b. Conflict resolution rules
c. Forward chain
d. Backward chain rules

52._____are data structures for representing stereotypical knowledge of some concept or object.

a. **Frames page 98 HO**
b. Resolutions
c. Conjunctions
d. Disjunctions

53. Which of the following command is used to see the added facts in CLIPS?

a. (fact)
b. Fact
c. **(facts) Page No. 135 (HANDOUTS)**
d. deftemplate

54. Ability to tackle ambiguous and fuzzy problems demonstrate

a. **Intelligence page 6 HO**
b. Non intelligence behavior
c. Deep learning
d. Machine leaning

55. Which approach is used by the Best First Search algorithm while searching?

a. Divide and Conquer
b. Heuristic
c. **Greedy Page No. 47 (HANDOUTS)**
d. Combinatorial

56. We use graphs to represent problems and their_____.

a. **solution spaces page 22 HO**
b. knowledge base
c. parameters
d. nodes and vertices

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57. Which of the following is not a branch and bound strategy to generate branches?

a. LIFO branch and bound

b. Lowest cost branch and bound
c. FIFO branch and bound
d. Highest cost branch and bound GOOGLE

58. "I have never seen horses eating meat, so I can conclude that horses never eat meat". The given statement refers to:

a. Inductive reasoning Page No. 102 (HANDOUTS)
b. Abductive reasoning
c. Common-sense reasoning
d. Non-monotonic reasoning

59. Expert system can be expressed as:

a. It provides tools for the management, delivery, tracking, and assessment of various types of employee learning and training
b. The set of business processes, culture, and behavior required to obtain value from investments in information systems
c. Used for finding the optimal solution for a specific problem by examining a very large number or possible solutions for that problem
d. Intelligent technique for capturing tacit knowledge in a very specific and limited domain of human expertise, this knowledge is converted to rules that can be used throughout the entire organization (page 112 lecture 18 of HO)

60. The state that represents the solution of the problem is called_____.

a. Solution space
b. Goal space page 17 HO
c. Problem statement
d. Knowledge base

61. What will be the output when we will remove arrow?

A -> B AL-JUNAID INSTITUE OF GROUP

a. ~A ∨ ~B
b. ~A v B page 108 HO
c. A ∨ ~B
d. ~A AND B

62. If Ali is 2 years younger than Umar and Umar is 23 years old. How old is Ali?

a. Ali is 22 years old.
b. Ali is 21 years old. Page 10 HO

c. Ali is 23 years old.
d. All is 20 years old.

63. Speed of an expert system is_____as compared to a human expert.
a. **High page 113 HO**
b. Low
c. Medium
d. Average

64. "The process of working with knowledge, facts and problem solving strategies to draw conclusions". The above statement refers to:
a. **Reasoning page 102 HO**
b. Object-attribute-value triplet
c. Refutation
d. Conversion

65. _____is the part of the system that controls the process of deriving conclusions.
a. **A knowledge base page 117 HO**
b. A database of facts
c. An interpreter, or inference engine
d. An object

66. The travelling inside a solution space requires something called as_____.
a. Operands
b. Inner solution
c. Space solution
d. Operators page 18 HO

67. In the sequence 2 6 8 3 4 5 3 1, where will the value of Q5 placed in eight queen problem?
a. 2nd row and 1st column
b. 7th row and 6th column
c. 4th row and 5th column Page No. 83 (HANDOUTS)
d. 3rd row and 2th column

68. The genetic algorithm technology comes from the concept of _____ evolution.
a. Animals
b. Robots

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c. Human page 77 HO

d. artificial intelligence

69. Identify the TRUE statement about alpha-beta pruning:

a. **It reduces both the tree branches that must be generated and the number of evaluations page 64 HO**

b. It decides about branching factor in a tree

c. It is core of progressive deepening search

d. Beta is the maximum upper bound of possible solutions

70. _____has the same notion of having something or some attribute from a parent.

a. Mutation

b. Crossover

c. Inheritance Page 77 HO

d. Gene

71. Which statement is wrong about heuristic search?

a. to discover something or an idea embedded in a program

b. to search and measure how far a node in a search tree seems to be from a goal

c. to compare two nodes in a search tree to see if one is better than another

d. give no optimal solution page 37 HO (used for guess not right but correct solution)

72. "In context of Hill climbing algorithm, situation may arise when a step in one direction takes you lower, on the other hand when you step in some other direction it gives you no improvement." The above statement refers to:

a. Foothill problem AL-JUNAID INSTITUE OF GROUP

b. Plateau problem

c. Ridge problem page 40 HO

d. Slope problem

73. A Personal Consultant knowledge base contain information in the form of _____.

a. Parameters

b. Rules page 95 HO

c. Facts

d. errors

74. Variable rule is matched with known facts and different possibilities for the variables are tested, to determine the truth of the fact, such rules are also called as_____.

a. Uncertain rules AL-JUNAID INSTITUE OF GROUP
b. directive rules
c. fuzzy rules
d. Pattern-matching rules page 96 HO

75. We use graphs to represent problems and their solution spaces.

a. False
b. True Page No. 22 (HANDOUTS)

76. A natural language generation program must decide_____.

a. What to say
b. When to say something
c. Why it is being used
d. Both what to say & when to say something GOOGLE

77. Which of the following command is correct for adding numbers in CLIPS?

a. CLIPS>(3+4)
b. CLIPS> (+ 3 4) Page No. 133 (HANDOUTS)
c. CLIPS>(34_)
d. CLIPS> (+ 34+)

78. "Focused area of expertise" in human experts in referred to as_____in expert systems.

a. Domain Page No. 116 (HANDOUTS)
b. Knowledge
c. Reasoning
d. Inference engine

79. If Alpha implies beta is true and beta in known to be not true. Then alpha could not have been true. This rule refers as:

a. Modus ponens
b. Modus tolens Page No. 105 (HANDOUTS)
c. And-Introduction
d. And-Elimination

80. The process continues recursively until a premise is found that is not supported by a rule. i.e. a premise is called a_____if it cannot be concluded by any

rule.

a. Elementary
b. Primitive Page No. 126 (HANDOUTS)
c. Antique
d. All of the above

81.LISP was created by?

a. Alan Turning
b. Marvin Minsky
c. John McCarthy Page No. 10 (HANDOUTS)
d. Allen Newell and Herbert Simon

82.A computer vision technique that relies on image templates is_____.

a. Edge detection
b. Model-based vision
c. Robot vision
d. None of the mentioned

83.The Depth First Search traversal of a graph will result in?

a. Linked List
b. Tree Page No. 25 (HANDOUTS)
c. Graph with back edges
d. Array

84.The searching technique in which we purely use a hit and trial approach and will check all combinations till one takes it to the exact solution is referred to as _____.

a. Blind/uninformed Page No. 23 (HANDOUTS)
b. Informed/heuristic
c. Path/non-optimal
d. Optimal path

85.A statement in conjunctive normal form (CNF) consists of_____.

a. ANDs of Ors Page No. 107 (HANDOUTS)
b. ANDs
c. Ors
d. Ors of ANDs

86.Using deduction to reach a conclusion from a set of antecedents is called.

a. Forward chaining Page No. 123 (HANDOUTS)

b. Backward chaining
c. Backward propagation
d. Forward propagation

87._____is branch and bound technique with the improvement of underestimates and dynamic programming.

a. A* Procedure Page No. 56 (HANDOUTS)
b. Progressive deepening
c. Beam search
d. Linear search

88.Progressive deepening emulates BFS using DFS.

a.**True Page No. 32 (HANDOUTS)**
b. False

89.In CLIPS, the WATCH command is used for debugging programs.

a. True Page No. 135 (HANDOUTS)
b. False

90.In GA, the random process is repeated until an individual with required _____level is found.

a. Higher
b. Lower
c. Fitness Page No. 86 (HANDOUTS)
d. Logical

91.Which of the following is not the component of problem-solving?

a. Operators
b. Solution space
c. Problem statement
d. Operations Page No. 17 (HANDOUTS)

92.In_____searches we are concerned with finding any one solution to our problem.

a. Non optimal Page No. 24 (HANDOUTS)
b. Optimal path
c. Contrary path
d. Shortest path

93.How many types of graphs are there to use in problem-solving?

a. 1

b. 2 Page No. 22 HO

c. 3

d. 4

94. Which of the following tells us about problem-solving, correct efficient memory, and information manipulation?

a. Deep learning

b. Intelligence Page No. 6 HO

c. Machine learning

d. Deep learning

95. To which depth does the alpha-beta pruning can be applied?

a. 10 states

b. 8 states

c. 6 states

d. Any depth page 64 to 76 of HO

96. In_____we may have multiple agents searching for solutions in the same solution space.

a. **Adversarial Search page 62 HO**

b. Depth first search

c. Breadth first search

d. Progressive deepening

97. "The branch of computer science that is concerned with the automation of intelligent behavior" this definition of AI is from.

a. Charniak and McDermott

b. Winston

c. Luger and Subblefiled Page No. 8 (HANDOUTS)

c. Bellman

98. Which of the following disciplines provides us with the theories of structure and meaning of language.

a. Linguistic Page No. 9 (HANDOUTS)

b. Philosophy

c. Biology

d. Psychology

99. Technically hit and trial approach is called as the "Generate and_____" approach.

a. Consume
b. Test Page No. 15 (HANDOUTS)
c. Regenerate
d. Modify

100. Most of the solution spaces for problems can be represented in a _____.

a. **Graph Page No. 21 (HANDOUTS)**
b. Table
c. Demo
d. Tree

101. The plateau comes up when there is a mostly flat area_____the peaks.

a. Separating Page No. 40 (HANDOUTS)
b. Joining
c. Over AL-JUNAID INSTITUE OF GROUP
d. None of the given

102. Best-first search always moves_____from the node that seems closest to the goal node.

a. Backward
b. Left
c. Right
d. Forward Page No. 44 (HANDOUTS)

103. In Adversarial search there may occur such a scenario where two opponents also called_____are searching for a goal.

a. Adversaries Page No. 62 (HANDOUTS)
b. Enemies
c. Players
d. Intruders

104. Frames were developed from semantic networks and later evolved into our modern-day Classes and Objects.

a. **True Page No. 98 (HANDOUTS)**
b. False

105. Deductive Reasoning is based on deducing old information from logically related unknown information.

a. True

b. False Page No. 102 (HANDOUTS)

106. Another expert system named_____was developed by Digital Equipment Corporation, as a computer configuration assistant.

a. R1/XCON Page No. 112 (HANDOUTS)

b. MYCIN

c. Dendral

d. R3/XCON

107. In backward chaining terminology, the hypothesis to proved is called _____.

a. **Proof Page No. 126 (HANDOUTS)**

b. Goal

c. Plan

d. None of the given

108. _____chaining is more focused and tries to avoid exploring unnecessary path of reasoning.

a. Forward

b. Backward Page No. 128 (HANDOUTS)

c. Both forward and backward

d. None of the given

109. Assisting an expert is the most commonly found role of an Expert System.

a. False

b. True Page No. 114 (HANDOUTS)

110. Procedures that search the solution space in an uninformed manner are usually costly with respect to_____. AL-JUNAID INSTITUE OF GROUP

a. Time

b. Space

c. Time and space both Page No. 37 (HANDOUTS)

d. None of the given

111. Inductive learning is based on the knowledge that if something happens a lot it is likely to be generally _____

a. **True Page No. 160 (HANDOUTS)**

b. False

c. Ambiguous

d. None of the given

112. Usually a_____graph is chosen to represent a fuzzy set.

a. Triangular Page No. 151 (HANDOUTS)

b. Circular

c. Conical

d. None of the given

113. Reasoning in fuzzy logic is just a matter of generalizing the familiar _____logic.

a. **Boolean (Page 147 HO)**

b. Complex

c. Coagnitive

d. Supervised

114. It was Aristotle who came up with the 'Law of the Excluded Middle'.

a. **True (Page 145 HO)**

b. False

115. We can get optimal solution given some parameters using Genetic Algorithm.

a. **True (Page79 HO)**

b. False

116. _____Reasoning is based on forming, or inducing a 'generalization' from a limited set of observations.

a. Deductive

b. Abductive

c. Analogical

d. Inductive (Page 102 HO)

117. _____is the process of deriving logical conclusions from given facts.

a. Representation AL-JUNAID INSTITUE OF GROUP

b. Execution

c. Reasoning Page No. 102 (HANDOUTS)

d. Planning

118. Identify the correct step used to start design of an expert system.

a. Feasibility study Page No. 129 (HANDOUTS)

b. Problem reorganization

c. Scope study

d. Rapid prototyping

119. If the antecedent is only partially true, then the output fuzzy set is truncated according to the_____method

a. Intrinsic

b. Implication Page No. 153 (HANDOUTS)

c. Boolean

d. None of the given

120. Choose the fields in which Fuzzy inference systems have been successfully applied:

a. automatic control

b. data classification

c. decision analysis

d.All of the given (Page 153 HO)

121. Fuzzy logic is actually a superset of conventional Boolean logic

a.**TRUE Page No. 150 (HANDOUTS)**

b. FALSE

122. A classical set is a container, which wholly includes or wholly excludes any given element.

a.**TRUE Page No. 145 (HANDOUTS)**

b. FALSE

123. The degree of truth that we have been talking about is specifically driven out by a function called the_____function.

a. Membership Page No. 149 (HANDOUTS)

b. Ordinary

c. Fuzzy

d. Inline

124. The tractable problems are further divided into structured and _____ problems

a. Non-structured

b. Complex Page No. 166 (HANDOUTS)

c. Simple

125. Clips command for adding two numbers 3 and 4 is.

a. CLIPS (+ 3 4) Page No. 133 (HANDOUTS)

b. CLIPS (3 4 +)

126. Reasoning in forward chaining is known as:
   a. Data-driven reasoning Page No. 123 (HANDOUTS)
   b. Rule-driven reasoning
   c. Intelligence-driven reasoning
   d. Goal-driven reasoning

127. Reasoning in backward chaining is known as:
   a. Data-driven reasoning
   b. Rule-driven reasoning
   c. Intelligence-driven reasoning
   d. Goal-driven reasoning Page No. 127 (HANDOUTS)

128. Identify the step involved in planning phase.
   a. Knowledge acquisition from expert
   b. Coding
   c. Resource allocation Page No. 129 (HANDOUTS)
   d. Identify concrete knowledge element

129. Identify the correct definition of linear model given below.
   a. **A linear sequence of steps is applied repeatedly in an iterative fashion to develop the software models.**
   Page No. 129 (HANDOUTS)
   b. Non sequential sequence of steps is applied repeatedly in an iterative fashion to develop the expert systems.
   c. A non linear sequence of steps is applied repeatedly in an iterative fashion to develop the expert systems.

130. A tule, which takes a set of inputs and gives advice, as a result, is called
   a. Recommendation Rule
   b. Directive Rule Page No. 96 (HANDOUTS)
   c. Relation Rule
   d. None of the given options

131. IF temperature is below 0 THEN weather is cold The above rule is used to represent _____
   a. Recommendations
   b. Directives
   c. Relations Page No. 96 (HANDOUTS)
   d. None of the given options

132. Within an expert system, the_____contains facts about a specific subject area and rules that express the reasoning procedures of an expert on the subject. AL-JUNAID INSTITUE OF GROUP

a. Inference engine
b. Knowledge engineer
c. Knowledge base page 117 HO
d. Inference logic

133. Expert system technique where a hypothesis is given at the beginning and the inference engine proceeds to ask the user questions about selected facts until the hypothesis is either confirmed or denied

a. Network Knowledge
b. Data mining
c. Backward chaining GOOGLE/ page 126 HO
d. Forward chaining

134. In some cases, the rules provide more definite actions such as "move left" or "close door", in which case the rules are being used to represent_____.

a. Recommendations
b. Directives GOOGLE / Page 96 HO
c. Relations
d. None of the given options

135. While solving a problem, how many states we already know?

a. **2 page 23 HO**
b. 3
c. 4
d. 5

136. Semantic networks are graphs, with nodes representing_____and arcs representing_____between objects.

a. objects, relationships Page No. 97 (HANDOUTS)
b. relationships, distance
c. objects, distance
d. distance, relationships

137. The problem is to place 8 queens on a chess board by using genetic algorithm, so that none of them can attack the other. A chess board can be considered as plain board with_____columns and_____rows.

a. Eight, six

b. Eight, seven Page No. 82 (HANDOUTS)

c. Eight, eight

d. Eight, nine

138. What is the correct order for solving a problem using GA

I. Choose the best individuals from the population for crossover

II. Choose initial population

III. Evaluate the fitness of each individual

a. I, II, III

b. I, III, II

c. II, I, III

d. II, III, I page 78 (HANDOUTS)

139. Mutation can be as simple as just flipping a bit at random or any number of bits

a. **True Page No. 79 (HANDOUTS)**

b. False

140. In Depth First Search the node with the largest value of height will be at the priority to be picked.

a. Minimum

b. Maximum Page No. 28 (HANDOUTS)

c. Zero

d. Both Minimum and maximum

141. A proposition is the statement of a_____.

a. **Fact Page No. 94 (HANDOUTS)**

b. Equation

c. Action

d. Theorem

142. According to Haugeland intelligence systems are_____.

a. think like humans Page No. 7 (HANDOUTS)

b. act like humans

c. behave like an abnormal man

d. behave like humans

143. "Swimming in river is just like swimming in a pool". The given statement is an example of:

a. Analogical reasoning page 103 (HANDOUTS)

b. Logical reasoning

c. Non-monotonic reasoning
d. Inductive reasoning

144. In CLIPS, the_____command is used for debugging programs.
a. FACT
b. WATCH Page No. 135 (HANDOUTS)
c. CLEAR
d. DEBUG AL-JUNAID INSTITUE OF GROUP

145. Crisp set is not a synonym for _____
a. **Fuzzy set page 145 to 147 HO**
b. Classical set

146. In general, the antecedent of a rule compares an object with a possible value, using an operator.
a. True (Fuzzy operator) See Chapter 6 of HO
b. False

147. Which of the following is a valid example which represents a suitable antecedent in a rule?
a. IF x>3
b. IF name is "Bob"
c. IF weather is cold
d. All of the given options page 95 of HO

148. From discipline of_____we have the tools and techniques to investigate the human mind and ways to represent the resulting theories
a. Computer Science
b. Biology
c. Mathematics
d. Psychology Page No. 9 (HANDOUTS)

149. Intelligence is the characteristic of
a. Living being Page No. 4 (HANDOUTS)
b. All things
c. None of them
d. All of them

150. _____AI treats the brain as a black box and just emulates its functionality.
a. **Weak Page No. 8 (HANDOUTS)**
b. Strong

c. Weak and Strong
d. Intermediate

151. A ∨ (B ∧ C) =

Note:
"∨" represents OR operator
"∧" represents AND operator

a. (A ∨ B) ∧ (A ∨ C) Page No. 108 (HANDOUTS)
b. (A ∧ B) ∧ (A ∧ C)
c. (A ∨ B) ∨ (A ∨ C)
d. (A ∨ C) ∨ (A ∨ B)

152. For [5, 7] and the data points (1, 10) and (2, 13), then what will be the value of badness?

a. 12
b. 20 Page No. 79 (HANDOUTS)
c. 22
d. 24

153. Which of the following is not a search strategy?

a. Blind/uninformed search
b. Informed/heuristic search
c. Any path search
d. Leaf path search Page No. 23 (HANDOUTS)

154. Graphs are used to represent_____and_____.

a. problems, solution Page No. 22 (HANDOUTS)
b. terminals, branches
c. nodes, vertices AL-JUNAID INSTITUE OF GROUP
d. branches, nodes

155. According to Kurzweil intelligence systems are_____.

a. think like humans
b. act like humans Page No. 7 (HANDOUTS)
c. behave like an abnormal man
d. behave like humans

156. Where do the values of the alpha-beta search get updated?

a. At the end
b. Along the path of search page 64 to 71 of HO
c. Initial state itself

d. At the beginning

157. Solving 32-bit computer words using genetic algorithm we want a string in which all the bits are ones. We count the 1 bits in each word and exit if any of the words having all 32 bits set to 1 by using_____.

a. Initial population

b. Evaluation function Page 78 HO

c. Mutation

d. Search space

158. Which particular generation of computers is associated with artificial intelligence?

a. Second

b. Fourth

c. Fifth Page No. 12 (HANDOUTS)

d. Third

159. _____is used when the facts of the case are likely to change after some time.

a. Inductive reasoning

b. Non-Monotonic reasoning Page No. 103 (HANDOUTS)

c. Analogical reasoning

d. Common-sense reasoning

160. _____is a genetic operator used to maintain genetic diversity from one generation of a population of genetic algorithm chromosomes to the next.

a. Inheritance

b. Mutation GOOGLE/ Page 78 of HO

c. Gene

d. Crossover

161. _____can be as simple as just flipping a bit at random or any number of bits

a. Mutation Page No. 79 (HANDOUTS)

b. Inheritance

c. Crossover

d. Gene

162. In progressive depending, the idea is to simply apply DFS to a specific.

a. **Level Page No. 32 (HANDOUTS)**

b. Node

c. Branch
d. Branching factor

163. Line fitting problem using genetic algorithm, if the badness of any of the solution is_____. It means that given points lies on the line.

a. **Zero page 79 of HO**
b. One
c. Two AL-JUNAID INSTITUE OF GROUP
d. Three

164. Resolution requires all sentences to be converted into a special form called:

a. Conjunctive normal form (CNF) Page No. 107 (HANDOUTS)
b. Third Normal form
c. De-normalized Normal form
d. 1st Normal form

165. In genetic algorithm, we produce the next generation from the _____.

a. genes and inheritance
b. inheritance and mutation Page No. 77 (HANDOUTS)
c. mutation and genes
d. crossover

166. What are the components of a rule?

a. Else and Then
b. Premise and Conclusion Page No. 95 (HANDOUTS)
c. Then and Break
d. If and Else

167. A "circle" symbol in a tree structure is called.

a. **Node chapter 2 of HO**
b. Edge
c. Ancestor
d. Descendant

168. A search algorithm takes_____as an input and returns_____as an output.

a. Input, output
b. Problem, solution GOOGLE/ Chapter 2 of HO
c. Solution, problem
d. Fuzzy set, uncertain facts

169. One of the advantages of breadth first search is that it
   a. **Guarantees finding the shallowest path even in presence of infinite paths Page No. 32 (HANDOUTS)**
   b. Has a small space requirement
   c. Can work with broken edges
   d. Memory Constraints

170. Which expert system was design for chemical analysis of Martian soil for space mission?
   a. MYCIN
   b. Dendral Page No. 112 (HANDOUTS)
   c. R1/XCON
   d. PXDES AL-JUNAID INSTITUE OF GROUP

171. Branch and bound is a_____.
   a. Data structure
   b. Problem-solving technique Page No. 2 (HANDOUTS)
   c. Sorting algorithm
   d. Type of tree

172. Which of the following is not the application area of intelligence?
   a. Robotics
   b. Expert system
   c. Computer vision
   d. Human computer interaction page 13 of HO

173. There are many techniques to solve our problem of optimal search without using a brute force technique; one such procedure is called_____.
   a. Branch-and-bound method Page No. 48 (HANDOUTS)
   b. Depth first method
   c. Breadth first method
   d. Progressive deepening

174. Which of the following is NOT one of the drawbacks of depth first search?
   a. Can run forever in search spaces with infinite length paths
   b. Does not guarantee finding the shallowest goal
   c. Requires the tree to be a complete tree
   d. Cut-off depth is smaller so time complexity is more. (Chapter 2 of HO)

175. _____logic lets us define more realistically the true functions that

define real world

a. **Fuzzy Page No. 148 (HANDOUTS)**
b. Classical
c. Boolean
d. None of the given

176. What is the fitness value of the following sequence 4 6 8 2 7 1 3 5 in eight queen problem?

a. 6
b. 7
c. 8 page 86 of HO
d. 9

177. Which one is not the application area of expert system?

a. Diagnosis
b. Prescription
c. Interpretation
d. None Page No. 114 (HANDOUTS)

178. An expert system is different from conventional programs in the sense that program control and knowledge are_____.

a. Separate Page No. 121 (HANDOUTS)
b. Defined
c. Together
d. Common AL-JUNAID INSTITUE OF GROUP

179. Which one of the following is involved in an ES development project:

a. The domain expert
b. The knowledge engineer
c. The end user
d. All of the given Page No. 122 (HANOUTS)

180. "A computer program designed to model the problem solving ability of a human expert" is known as ---

a. Expert system Page No. 111 (HANDOUTS)
b. Intelligent System
c. Echo System
d. Energy System

181. An expert system may replace the expert or assist the expert

a. **True Page No. 113 (HANDOUTS)**

b. False

182. A ---------- is 'A person who posses the skill and knowledge to solve a specific problem in a manner superior to others'

a. The domain expert Page No. 122 (HANDOUTS)

b. The knowledge engineer

c. The end user

d. All of the given

183. Conventional programming focuses on_____, while ES programming focuses on _____

a. Solution, Problem Page No. 122 (HANDOUTS)

b. Problem, Solution

c. Problem, Expert

d. Solution, Expert

184. Genetic algorithm uses evolutionary techniques, based on function optimization and artificial intelligence, to develop a solution.

a. **True ref book**

b. False

185. An AI system has a_____component that allows the system to get information from its environment.

a. Planning

b. Perception Page No. 89 (HANDOUTS)

c. Learning

d. Execution

186. In the worst case of semantic network, we may need to traverse the entire network and then discover that the requested info _____

a. Does not exist Page No. 97 (HANDOUTS)

b. Exists

c. Is incorrect AL-JUNAID INSTITUE OF GROUP

d. Is correct

187. An AI system must form a meaningful and useful_____of the internal information.

a. Representation Page No. 89 (HANDOUTS)

b. Execution

c. Learning

d. Planning

188. Breadth-first search is a good idea when you are confident that the branching factor is_____

a. Extremely small
b. Small REFERENCE BOOK
c. Medium
d. Large

189. Progressive deepening guarantees to find the solution at a minimum depth like

a. DFS
b. BFS Page No. 37 (HANDOUTS)
c. None

190. In Adversarial search the goals of the adversaries are usually_____to each other

a. **Contrary Page No. 62 (HANDOUTS)**
b. Same
c. None

191. To infer new information from semantic networks, we can ask questions from nodes.

a. True Page NO. 97 (HANDOUTS)
b. False

192. Semantic networks are computationally expensive at _____

a. Runtime Page No. 97 (HANDOUTS)
b. Compile Time
c. Start Time
d. End Time

193. Searching is a formal mechanism to explore

a. Alternatives Page No. 21 (HANDOUTS)
b. Recursive
c. Best AL-JUNAID INSTITUE OF GROUP
d. Fitness

194. In Artificial Intelligence GA stands for Genetic Algorithms

a. **True Page No. 77 (HANDOUTS)**
b. False

195. Every graph can be converted into a tree

a. **True Page No. 22 (HANDOUTS)**

b. False

196. Hill Climbing is basically a ---------- with a measure of quality that is assigned to each node in the tree.

a. Depth First Search Page No. 39 (HANDOUTS)

b. Breadth First Search

c. Best First Search

d. Beam Search

197. The Data structure used in the standard implementation of Breadth-First Search is?

a. Stack

b. Queue google

c. Linked List

d. Tree

198. The Data structure used in the standard implementation of Depth-First Search is?

a. **Stack google**

b. Queue

c. Linked List

d. Recursion

199. Which searching technique gives us a better solution every time.

a. blind/uninformed

b. informed/heuristic page 24 25 of HO

c. path/non-optimal

d. optimal path

200. In AI cycle_____are closely coupled components; each is intrinsically tied to the other.

a. **knowledge representation and reasoning Page No. 89 (HANDOUTS)**

b. learning and execution

c. perception and planning

d. learning and planning

201. ---------- are closely coupled components; each is intrinsically tied to the other.

i. Knowledge representation

ii. Reasoning

iii. Planning
iv. Execution

a. ii & iii
b. ii & iii
c. iii & iv
d. i & ii Page No. 89 (HANDOUTS)

202. Which one of the problem is more subtle, and consequently, is more frustrating:

a. Foothill problem
b. Plateau
c. Ridge My Point Of View
d. Box

203. By getting grips on_____that deal with searching techniques in graphs and trees, problem solving can be performed in an efficient manner.

a. Pseudocode
b. Algorithms Page No. 21 (HANDOUTS)
c. Charts
d. Graphs

204. In Breadth First Search the node with the largest value of height will be at thepriority to be picked.

a. Maximum Page No. 28 (HANDOUTS)
b. Minimum
c. None of the given

205. Breadth-First Search checks all paths of a given length before moving on to any longer paths.

a. **True REFERENCE BOOK**
b. False

206. The foothhill problem occurs whenever there are_____peaks.

a. High
b. Secondary REFERENCE BOOK
c. Primary
d. Deep

207. The Plateau problem comes up when there is a mostly flat area _____ the peaks.

a. **Separating REFERENCE BOOK**

b. Joining
c. Over
d. None of the given

208. The paths found by best-first search are likely to be_____than those found with other methods.

a. None of the given
b. Shorter REFERENCE BOOK
c. Longer

209. In Basic Genetic Algorithm the term mutation refers to a small random _____.

a. Number
b. Change Page No. 77 (HANDOUTS) AL-JUNAID INSTITUE OF GROUP
c. Operator
d. Operand

210. Genetic Algorithms is a search method in which multiple search paths are followed in _____

a. Series
b. Parallel Page No. 77 (HANDOUTS)
c. None of the give
d. Sequential

211. In optimal path searches we try to find the_____solution

a. Least
b. Worst
c. Least but not worst
d. Best Page No. 24 (HANDOUTS)

212. From discipline_____we have information about the network structure of a human brain and all the theories on functionalities of different human organs.

a. Mathematics
b. Biology Page No. 9 (HANDOUTS)
c. Computer Science
d. Psychology

213. Intelligence is the ability to

a. Think /learn/Plan/ Schedule Page No. 5 (HANDOUTS)

b. Recognize / Remember
c. Problem Solving
d. All of the Above

214. Can we precisely define Artificial Intelligence?
a. Yes We Can
b. No we cannot Page No. 14 (HANDOUTS)

215. Try to catch out own thoughts as they go by is
a. Introspection Page No. 8 (HANDOUTS)
b. Psychology
c. Both of above
d. None of the above

216. Classical way of problem solving
a. GA
b. Generate and Test Page No. 15 (HANDOUTS)

217. Best first search is a greedy approach.
a. **True Page No. 47 (HANDOUTS)**
b. False

218. Answering the Sequence Problem need
a. Intelligence Page No. 5 (HANDOUTS)
b. Ability to make plan
c. Ability to schedule
d. None of the given

219. In the statement "IF A THEN B", B is called
a. Antecedent
b. Consequent Page No. 95 (HANDOUTS)

220. Rule, which may have a priority in expert systems, is called
a. Meta rule
b. Conflict resolution rule
c. Forward chain rule **Page 123**
d. backward chain rule

221. What will be the conjunctive normal of (A -> B) -> B?
a. (A ∨ B) Page No. 110 (HANDOUTS)
b. (A AND B)
c. (~A ∨ B)
d. (A ∨ ~B)

222. Eight queen problem illustrates that placement of 8 queens on a chess board so that none of them can_____the other.

a. **Attack** **Page No. 82 (HANDOUTS)**
b. Breed
c. Mutate
d. Generate

223. Which value is assigned to alpha and beta in the alpha-beta pruning?

a. Alpha = max
b. Beta = min
c. **Both Alpha = max & Beta = min** **GOOGLE / page 65 to 71**
d. Alpha = max

224. Which search method takes less memory?

a. Depth-First Search **GOOGLE/ page 25 to 27 of HO**
b. Breadth-First Search
c. Optimal Search
d. Linear Search

225. In CNF (Conjunctive normal form) the outermost structure is made up of _____and inner units called clauses are made up of_____.

a. **conjunctions ,disjunctions** **Page No. 108 (HANDOUTS)**
b. disjunctions, conjunctions
c. resolution, refutation
d. refutation, resolution

226. The components of a statement in CNF (Conjunctive normal form) are clauses and literals. And clause in CNF is the_____of many units.

a. Disjunction **Page No. 108 (HANDOUTS)**
b. Conjunction
c. Separation
d. Subtraction

227. According to De Morgan's Laws:
~(A v B) = ?
Note: "~" represents negation.

a. ~A -> B
b. ~B -> A

c. ~A ∧ ~B Page No. 108 (HANDOUTS)

d. ~B -> ~A

228. which of the following best represents the fuzzy logic?

a. A method of reasoning that resembles human reasoning.

b. A method of question that resembles human answer.

c. A method of giving an answer that resembles human answer.

d. A method that resembles with problem solving technique. (Chapter 6 of HO)

229. _____is a description of valid statements, the expressions that are legal in that language.

a. Syntax Page No. 104 (HANDOUTS)

b. Semantics

c. Behavior

d. Operator

230. Genetic Algorithm is a_____in which multiple search paths are followed in parallel.

a. search method Page No. 77 (HANDOUTS)

b. data structure

c. sorting algorithm

d. type of tree

231. In_____reasoning the conclusion derived may be wrong.

a. Abductive Page No. 103 (HANDOUTS)

b. Monotonic

c. Deductive

d. Inductive

232. Trying to catch out own thoughts as they go by

a. Introspection Page No. 8 (HANDOUTS)

b. Psychological experiments

c. Introspection and Psychological experiments

d. Theoretical experiment

233. Which values are independent in the minimax search algorithm?

a. Pruned leaves x and y GOOGLE

b. Each state are dependent

c. Root is independent

d. Non pruned leaves

234. We can get_____solution given some parameters using Genetic Algorithm.

a. Optimal Page No. 205 (HANDOUTS)

b. Formal

c. Complex

d. Structured

235. Which of the following is/are considered being trait(s) of an expert?

a. They possess specialized knowledge in certain area

b. They possess experience the given area

c. They can provide, upon elicitation, an explanation of their decisions

d. All of the given options Page No. 111 (HANDOUTS)

236. The domain of intelligence in which machines that act intelligently and they have real conscious minds is called_____.

a. strong AI Page No. 8 (HANDOUTS)

b. weak AI

c. both of the above

d. none of the above

237. MYCIN was an important system in the history of Al because it demonstrated that expert systems could be used for solving practical problems for.

a. Physicians Page No. 112 (HANDOUTS)

b. Engineers

c. Students

d. Lawers

238. In eight queen problem for the given sequence 1 6 5 3 2 5 3 7 the position of Q4 queen is at_____.

a. **Fourth column and third row Page No. 83 (HANDOUTS)**

b. Second column and third row

c. First column and third row

d. Eighth column and second

239. At an early stage, a problem in search space is defined by one of these states.

a. **Initial state GOOGLE**

b. Last state

c. Intermediate state

d. All of the mentioned

240. In the min max procedure, the player hoping for the positive numbers is called_____.

a. minimizer

b. maximizer Page No. 63 (HANDOUTS)

c. analyzer

d. researcher

241. The expression 'the cat drove the car' is_____correct, but _____ non-sensible.

a. logically, inductively

b. deductively, inductively

c. syntactically, semantically Page No. 106 (HANDOUTS)

d. Monotonically, non-monotonically

242. Which of the following is the name of the algorithm that evolves the concept of our genes?

a. Statistical algorithm

b. Genetic algorithms Page No. 76 (HANDOUTS)

c. Searching algorithm

d. Conventional algorithm

243. _____alters one or more gene values in a chromosome from its initial state.

a. Inheritance

b. Mutation GOOGLE (https://en.wikipedia.org/wiki/Mutation_)

c. Gene

d. Crossover

244. _____combine predicates and quantifiers to represent information.

a. Objects

b. Subjects

c. Formulae Page No. 101 (HANDOUTS)

d. Constants

245. In intelligence to solve the trivial problems we use_____approach

a. Trial and error

b. Hit and trial Page No. 15 (HANDOUTS)

c. Dynamic programming

d. Divide and conquer

246. In Line fitting problem using genetic algorithm usual way to compute the goodness to fit the polynomial on the given data points can computed as _____.

a. (actual y - predicted y)^2 Page No. 79 (HANDOUTS)

b. (actual y)^2

c. y = mx + c

d. y = mx

247. The initial state and the legal moves for each side define the_____for the game.

a. Search tree

b. Game tree GOOGLE / page 63 of HO

c. State-space search

d. Forest

248. "If you find the goal, exit, otherwise repeat DFS to the next lower level". The statement refers to:

a. Depth first search

b. Breadth first search

c. Progressive depending Page No. 32 (HANDOUTS)

d. None progressive depending

249. Relationships between objects and concepts represent which type of knowledge?

a. Declarative

b. Structural Page No. 91 (HANDOUTS)

c. Heuristic

d. Meta

250. Which search is equal to min max search but eliminates the branches that can't influence the final decision?

a. Depth-first search

b. Breadth-first search

c. Alpha-beta pruning Page No. 64 (HANDOUTS)

d. Beam search

251. Forward chaining is known as:

a. Data-driven reasoning Page No. 123 (HANDOUTS)

b. Rule-driven reasoning

c. Intelligence-driven reasoning

d. Goal-driven reasoning

252. "Specialized knowledge" in human experts is referred to as_____, when it comes to an expert system.

a. Domain Knowledge Page No. 116 (HANDOUTS)

b. Reasoning Knowledge

c. Predicate engine

d. Affirmation knowledge

253. _____is based on deducing new information from logically related known information.

a. Inductive reasoning

b. Abductive reasoning

c. Deductive reasoning Page No. 102 (HANDOUTS)

d. Common-sense reasoning

254. In eight queen problem the given sequence 2 6 8 3 4 5 3 1 illustrates that in _____column the queen is placed in the_____row.

a. sixth, second

b. first, fifth

c. second, sixth Page No. 83 (HANDOUTS)

d. third, fifth

255. In context of tree, an arrow from one node to other is called:

a. Root

b. Descendant

c. Edge

d. Ancestor

256. _____describes objects, rather than processes. That is known about a situation, e.g. it is sunny today, and cherries are red.

a. Procedural knowledge

b. Declarative knowledge Page No. 90 (HANDOUTS)

c. Meta knowledge

d. Heuristic knowledge

257. Which of the following is not the example of uninformed search?

a. Depth first search

b. First path search

c. Breadth first search

d. Progressive deepening

258. The "part of the expert system that contains the problem facts that are discovered during the session" is called:

a. Working memory Page No. 117 (HANDOUTS)

b. System memory

c. Secondary storage

d. Reserved media

259. Psychological experiments deal with the stud of_____.

a. introspection

b. study of the mind

c. science of mental life Page No. 8 (HANDOUTS)

d. science of human body life

260. The component of the system that performs inference is called:

a. Inference engine Page No. 104 (HANDOUTS)

b. Inference object

c. Inference manager

d. inference class

261. _____type of knowledge can be represented as the Rule-of-thumb.

a. Procedural

b. Semantic

c. Meta

d. Heuristic Page No. 90 (HANDOUTS)

262. Backward chaining, however, starts with the_____and tries to reach down to all primitive nodes (marked by '?'), where information is sought from the user.

a. intermediate state

b. last state

c. goal state Page No. 127 (HANDOUTS)

d. transition state

263. In_____search, out of "n" possible choices at any level, we follow only the best "k" of them.

a. Beam search Page No. 43 (HANDOUTS)

b. Depth first search

c. Breadth first search

d. Progressive deepening

264. Every graph can be converted into a tree, by replacing the_____.
   a. terminals
   b. edges
   c. nodes Page No. 22 (HANDOUTS)
   d. branches

265. A fact or proposition is divided into two parts and are represented as _____.
   a. object and logic
   b. predicate and argument Page No. 101 (HANDOUTS)
   c. reasoning and variable
   d. algebra and calculus

266. Which of the following best represents the term perceptron?
   a. **A single layer feed-forward neutral network with pre-processing**
   b. An auto-associative neutral network
   c. A double layer auto-associative neural network
   d. A neural network that contains feedback

267. The term artificial intelligence was first came into existence in_____.
   a. **1956 Page No. 10 (HANDOUTS)**
   b. 1957
   c. 1958
   d. 1959

268. If you know that Alpha implies beta, and you know alpha to be true, you can automatically say that beta is true.
   a. Modus ponens Page No. 105 (HANDOUTS)
   b. Modus tolens
   c. And-Introduction
   d. And-Elimination

269. Backward chaining is more focused and tries to avoid exploring _____ path of reasoning.
   a. Unnecessary Page No. 128 (HANDOUTS)
   b. necessary
   c. searching
   d. different

270. In depth first search we keep our priority function as given below and given

give priority to elements with_____P(n) value where: P(n) = 1 / height(n).

a. Minimum Page No. 25 (HANDOUTS)

b. Maximum

c. Average

d. Absolute

271. What is the other name of the informed search strategy?

a. Simple search

b. Heuristic search Page No. 37 (HANDOUTS)

c. Online search

d. None of the mentioned

272. To create systems that can learn, think, perceive, analyze, and act in the same manner as real humans are the art of_____.

a. Artificial Intelligence Page No. 8 (HANDOUTS)

b. Deep learning

c. Machine learning

d. Fuzzy logic

273. Atomic units of knowledge called?

a. Rules

b. Methods

c. Facts Page No. 94 (HANDOUTS)

d. Proposition

274. _____uses evolutionary techniques, based on function optimization and intelligence, to develop a solution.

a. Genetic algorithm Page No. 77 (HANDOUTS)

b. Conventional algorithm

c. Sequential algorithm

d. Dynamic algorithm

275. An alternative method is the longest-matching strategy. This method involves firing the conclusion that was derived from the_____.

a. **Longest rule GOOGLE**

b. Shortest rule

c. Complex rule

d. Forward chain rule

276. Inference engine matches the facts contained in the_____with the

_____contained in the knowledge base, to draw conclusions about the problem.

a. Rule engine, operators
b. Fact table, working memory
c. Working memory, domain knowledge Page No. 117 (HANDOUTS)
d. Object, class

277. "Given that there is dry wood, oxygen and a spark, we can conclude that there will be fire". The above statement refers to:

a. Inductive reasoning
b. Abductive reasoning
c. Deductive reasoning Page No. 102 (HANDOUTS)
d. Common-sense reasoning

278. In genetic problem we start with a population of randomly generated _____to a problem.

a. attempted solutions Page No. 77 (HANDOUTS)
b. BFS
c. DFS
d. Final state

279. In the linear model which is not the step of the planning phase?

a. Feasibility assessment
b. Resource allocation
c. Task phasing and scheduling
d. Knowledge engineering Page No. 129 (HANDOUTS)

280. Alpha beta pruning relates to:

a. Minmax procedure Page No. 64 (HANDOUTS)
b. Breadth first search
c. Progressive deepening
d. Depth first search

281. In eight queen problem after performing mutation we flip bits at random and new board position is represented in binary as follows
0100 0101 1000 0010 0111 0001 0011 0101
Which of the following represent the new board position of individuals?

a. 4 3 8 2 7 1 3 5

b. 4 5 8 2 7 1 3 5

c. 4 5 3 2 7 1 3 5

d. 4 5 8 2 2 1 3 5

282. Predicate calculus allows us to use quantifiers for statements, the symbol for the universal quantifier is represented as_____.

a. **∀** **Page No. 100 (HANDOUTS)**

b. ∃

c. ∴

d. ∵

283. _____says that from "Alpha" and from "Beta" you can conclude "Alpha and Beta'.

a. Modus ponens

b. Modus tolens

c. And-Introduction Page No. 105 (HANDOUTS)

d. And-Elimination

284. Genetic algorithm use_____.

a. parallel approach Page No. 77 (HANDOUTS)

b. sequential approach

c. pipelining

d. heuristic approach

285. The ability to think, plan and schedule demonstrate_____.

a. problem-solving

b. intelligence Page No. 5 (HANDOUTS)

c. machine learning

d. deep learning

286. Facts are the atomic units of knowledge. They represent the following type of knowledge.

a. Common knowledge

b. Meta knowledge

c. Procedural knowledge

d. Declarative knowledge Page No. 94 (HANDOUTS)

287. Which of the following is not the main phase of the linear sequence?

a. Code

b. System evaluation

c. Planning

d. Requirement engineering **Page No. 129 (HANDOUTS)**