Neural Network

Multiple Choice Questions and Answers:-

1. A 3-input neuron is trained to output a zero when the input is 110 and a one when the input is 111. After generalization, the output will be zero when and only when the input is:

a) 000 or 110 or 011 or 101

b) 010 or 100 or 110 or 101

c) 000 or 010 or 110 or 100

d) 100 or 111 or 101 or 001

Answer: c

Explanation: The truth table before generalization is:

Inputs Output

000 $

001 $

010 $

011 $

100 $

101 $

110 0

111 1

where $ represents don't know cases and the output is random.

After generalization, the truth table becomes:

Inputs Output

000 0

001 1

010 0

011 1

100 0

101 1

110 0

111 1

.

2. A perceptron is:

a) a single layer feed-forward neural network with pre-processing

b) an auto-associative neural network

c) a double layer auto-associative neural network

d) a neural network that contains feedback

Answer: a

Explanation: The perceptron is a single layer feed-forward neural network. It is not an auto-associative network because it has no feedback and is not a multiple layer neural network because the pre-processing stage is not made of neurons.

3. An auto-associative network is:

a) a neural network that contains no loops

b) a neural network that contains feedback

c) a neural network that has only one loop

d) a single layer feed-forward neural network with pre-processing

Answer: b

Explanation: An auto-associative network is equivalent to a neural network that contains feedback. The number of feedback paths(loops) does not have to be one.

4. A 4-input neuron has weights 1, 2, 3 and 4. The transfer function is linear with the constant of proportionality being equal to 2. The inputs are 4, 10, 5 and 20 respectively. The output will be:

a) 238

b) 76

c) 119

d) 123

Answer: a

Explanation: The output is found by multiplying the weights with their respective inputs, summing the results and multiplying with the transfer function. Therefore:

Output = 2 * (1*4 + 2*10 + 3*5 + 4*20) = 238.

5. Which of the following is true?

(i) On average, neural networks have higher computational rates than conventional computers.

(ii) Neural networks learn by example.

(iii) Neural networks mimic the way the human brain works.

a) All of the mentioned are true

b) (ii) and (iii) are true

c) (i), (ii) and (iii) are true

d) None of the mentioned

Answer: a

Explanation: Neural networks have higher computational rates than conventional computers because a lot of the operation is done in parallel. That is not the case when the neural network is simulated on a computer. The idea behind neural nets is based on the way the human brain works. Neural nets cannot be programmed, they cam only learn by examples.

6. Which of the following is true for neural networks?

(i) The training time depends on the size of the network.

(ii) Neural networks can be simulated on a conventional computer.

(iii) Artificial neurons are identical in operation to biological ones.

a) All of the mentioned

b) (ii) is true

c) (i) and (ii) are true

d) None of the mentioned

Answer: c

Explanation: The training time depends on the size of the network; the number of neuron is greater and therefore the number of possible 'states' is increased. Neural networks can be simulated on a conventional computer but the main advantage of neural networks – parallel execution – is lost. Artificial neurons are not identical in operation to the biological ones.

7. What are the advantages of neural networks over conventional computers?

(i) They have the ability to learn by example

(ii) They are more fault tolerant

(iii)They are more suited for real time operation due to their high ‘computational’ rates

a) (i) and (ii) are true

b) (i) and (iii) are true

c) Only (i)

d) All of the mentioned

Answer: d

Explanation: Neural networks learn by example. They are more fault tolerant because they are always able to respond and small changes in input do not normally cause a change in output. Because of their parallel architecture, high computational rates are achieved.

8. Which of the following is true?

Single layer associative neural networks do not have the ability to:

(i) perform pattern recognition

(ii) find the parity of a picture

(iii)determine whether two or more shapes in a picture are connected or not

a) (ii) and (iii) are true

b) (ii) is true

c) All of the mentioned

d) None of the mentioned

Answer: a

Explanation: Pattern recognition is what single layer neural networks are best at but they don’t have the ability to find the parity of a picture or to determine whether two shapes are connected or not.

9. Which is true for neural networks?

a) It has set of nodes and connections

b) Each node computes it's weighted input

c) Node could be in excited state or non-excited state

d) All of the mentioned

Answer: d

Explanation: All mentioned are the characteristics of neural network.

10. Neuro software is:

a) A software used to analyze neurons

b) It is powerful and easy neural network

c) Designed to aid experts in real world

d) It is software used by Neuro surgeon

Answer: b

11. Why is the XOR problem exceptionally interesting to neural network researchers?

a) Because it can be expressed in a way that allows you to use a neural network

b) Because it is complex binary operation that cannot be solved using neural networks

c) Because it can be solved by a single layer perceptron

d) Because it is the simplest linearly inseparable problem that exists.

Answer: d

12. What is back propagation?

a) It is another name given to the curvy function in the perceptron

b) It is the transmission of error back through the network to adjust the inputs

c) It is the transmission of error back through the network to allow weights to be adjusted so that the network can learn.

d) None of the mentioned

Answer: c

Explanation: Back propagation is the transmission of error back through the network to allow weights to be adjusted so that the network can learn.

13. Why are linearly separable problems of interest of neural network researchers?

a) Because they are the only class of problem that network can solve successfully

b) Because they are the only class of problem that Perceptron can solve successfully

c) Because they are the only mathematical functions that are continue

d) Because they are the only mathematical functions you can draw

Answer: b

Explanation: Linearly separable problems of interest of neural network researchers because they are the only class of problem that Perceptron can solve successfully

14. Which of the following is not the promise of artificial neural network?

a) It can explain result

b) It can survive the failure of some nodes

c) It has inherent parallelism

d) It can handle noise

Answer: a

Explanation: The artificial Neural Network (ANN) cannot explain result.

15. Neural Networks are complex _____ with many parameters.

a) Linear Functions

b) Nonlinear Functions

c) Discrete Functions

d) Exponential Functions

Answer: a

Explanation: Neural networks are complex linear functions with many parameters.

16. A perceptron adds up all the weighted inputs it receives, and if it exceeds a certain value, it outputs a 1, otherwise it just outputs a 0.

a) True

b) False

c) Sometimes – it can also output intermediate values as well

d) Can’t say

Answer: a

Explanation: Yes the perceptron works like that.

17. The name for the function in question 16 is

a) Step function

b) Heaviside function

c) Logistic function

d) Perceptron function

Answer: b

Explanation: Also known as the step function – so answer 1 is also right. It is a hard thresholding function, either on or off with no in-between.

18. Having multiple perceptrons can actually solve the XOR problem satisfactorily: this is because each perceptron can partition off a linear part of the space itself, and they can then combine their results.

a) True – this works always, and these multiple perceptrons learn to classify even complex problems.

b) False – perceptrons are mathematically incapable of solving linearly inseparable functions, no matter what you do

c) True – perceptrons can do this but are unable to learn to do it – they have to be explicitly hand-coded

d) False – just having a single perceptron is enough

Answer: c

19. The network that involves backward links from output to the input and hidden layers is called as ____.

a) Self organizing maps

b) Perceptrons

c) Recurrent neural network

d) Multi layered perceptron

Answer: c

Explanation: RNN (Recurrent neural network) topology involves backward links from output to the input and hidden layers.

20. Which of the following is an application of NN (Neural Network)?

a) Sales forecasting

b) Data validation

c) Risk management

d) All of the mentioned

Answer: d

Explanation: All mentioned options are applications of Neural Network.

21. Different learning method does not include:

a) Memorization

b) Analogy

c) Deduction

d) Introduction

Answer: d

Explanation: Different learning methods include memorization, analogy and deduction.

22. Following are the advantage/s of Decision Trees. Choose that apply.

a) Possible Scenarios can be added

b) For data including categorical variables with different number of levels, information gain in decision trees are biased in favor of those attributes with more levels

c) Worst, best and expected values can be determined for different scenarios

d) Use a white box model, If given result is provided by a model

Answer: a, c, d

23. Which of the following is the model used for learning?

a) Decision trees

b) Neural networks

c) Propositional and FOL rules

d) All of the mentioned

Answer: d

Explanation: Decision tress, Neural networks, Propositional rules and FOL rules all are the models of learning.

24. Automated vehicle is an example of _____.

a) Supervised learning

b) Unsupervised learning

c) Active learning

d) Reinforcement learning

Answer: a

Explanation: In automatic vehicle set of vision inputs and corresponding actions are available to learner hence it's an example of supervised learning.

25. Following is an example of active learning:

a) News recommendation system

b) Dust cleaning machine

c) Automated vehicle

d) None of the mentioned

Answer: a

Explanation: In active learning, not only the teacher is available but the learner can ask suitable perception-action pair example to improve performance.

26. In which of the following learning the teacher returns reward and punishment to learner?

a) Active learning

b) Reinforcement learning

c) Supervised learning

d) Unsupervised learning

Answer: b

Explanation: Reinforcement learning is the type of learning in which teacher returns award or punishment to learner.

27. Decision trees are appropriate for the problems where:

a) Attributes are both numeric and nominal

b) Target function takes on a discrete number of values.

c) Data may have errors

d) All of the mentioned

Answer: d

Explanation: Decision trees can be used in all the conditions stated.

28. Which of the following is not an application of learning?

a) Data mining

b) WWW

c) Speech recognition

d) None of the mentioned

Answer: d

Explanation: All mentioned options are applications of learning.

29. Which of the following is the component of learning system?

a) Goal

b) Model

c) Learning rules

d) All of the mentioned

Answer: d

Explanation: Goal, model, learning rules and experience are the components of learning system.

30. Following is also called as exploratory learning:

a) Supervised learning

b) Active learning

c) Unsupervised learning

d) Reinforcement learning

Answer: c

Explanation: In unsupervised learning no teacher is available hence it is also called unsupervised learning.

31. A _____ is a decision support tool that uses a tree-like graph or model of decisions and their possible consequences, including chance event outcomes, resource costs, and utility.

a) Decision tree

b) Graphs

c) Trees

d) Neural Networks

Answer: a

Explanation: Refer the definition of Decision tree.

32. Decision Tree is a display of an algorithm.

a) True

b) False

Answer: a

33. Decision Tree is

a) Flow-Chart

b) Structure in which internal node represents test on an attribute, each branch represents outcome of test and each leaf node represents class label

c) Both a) & b)

d) None of the mentioned

Answer: c

Explanation: Refer the definition of Decision tree.

34. Decision Trees can be used for Classification Tasks.

a) True

b) False

Answer: a

35. How many types of learning are available in machine learning?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: The three types of machine learning are supervised, unsupervised and reinforcement.

36. Choose from the following that are Decision Tree nodes

a) Decision Nodes

b) Weighted Nodes

c) Chance Nodes

d) End Nodes

Answer: a, c, d

37. Decision Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: b

38. Chance Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: c

39. End Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: d

40. How the decision tree reaches its decision?

a) Single test

b) Two test

c) Sequence of test

d) No test

Answer: c

Explanation: A decision tree reaches its decision by performing a sequence of tests.

41. What will take place as the agent observes its interactions with the world?

a) Learning

b) Hearing

c) Perceiving

d) Speech

Answer:a

Explanation:Learning will take place as the agent observes its interactions with the world and its own decision making process.

42. Which modifies the performance element so that it makes better decision?

a) Performance element

b) Changing element

c) Learning element

d) None of the mentioned

Answer:c

Explanation:A learning element modifies the performance element so that it can make better decision.

43. How many things are concerned in design of a learning element?

a) 1

b) 2

c) 3

d) 4

Answer:c

Explanation:The three main issues are affected in design of a learning element are components, feedback and representation.

44. What is used in determining the nature of the learning problem?

a) Environment

b) Feedback

c) Problem

d) All of the mentioned

Answer:b

Explanation:The type of feedback is used in determining the nature of the learning problem that the agent faces.

45. How many types are available in machine learning?

a) 1

b) 2

c) 3

d) 4

Answer:c

Explanation:The three types of machine learning are supervised, unsupervised and reinforcement.

46. Which is used for utility functions in game playing algorithm?

a) Linear polynomial

b) Weighted polynomial

c) Polynomial

d) Linear weighted polynomial

Answer:d

Explanation:Linear weighted polynomial is used for learning element in the game playing programs.

47. Which is used to choose among multiple consistent hypotheses?

a) Razor

b) Ockham razor

c) Learning element

d) None of the mentioned

Answer:b

Explanation:Ockham razor prefers the simplest hypothesis consistent with the data intuitively.

48. What will happen if the hypothesis space contains the true function?

a) Relizable

b) Unrelizable

c) Both a & b

d) None of the mentioned

Answer:b

Explanation:A learning problem is realizable if the hypothesis space contains the true function.

49. What takes input as an object described bya set of attributes?

a) Tree

b) Graph

c) Decision graph

d) Decision tree

Answer:d

Explanation:Decision tree takes input as an object described by a set of attributes and returns a decision.

50. How the decision tree reaches its decision?

a) Single test

b) Two test

c) Sequence of test

d) No test

Answer:c

Explanation:A decision tree reaches its decision by performing a sequence of tests.

51. What will take place as the agent observes its interactions with the world?

a) Learning

b) Hearing

c) Perceiving

d) Speech

Answer: a

Explanation: Learning will take place as the agent observes its interactions with the world and its own decision making process.

52. Which modifies the performance element so that it makes better decision?

a) Performance element

b) Changing element

c) Learning element

d) None of the mentioned

Answer: c

Explanation: A learning element modifies the performance element so that it can make better decision.

53. How many things are concerned in design of a learning element?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: The three main issues are affected in design of a learning element are components, feedback and representation.

54. What is used in determining the nature of the learning problem?

a) Environment

b) Feedback

c) Problem

d) All of the mentioned

Answer: b

Explanation: The type of feedback is used in determining the nature of the learning problem that the agent faces.

55. How many types are available in machine learning?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: The three types of machine learning are supervised, unsupervised and reinforcement.

56. Which is used for utility functions in game playing algorithm?

a) Linear polynomial

b) Weighted polynomial

c) Polynomial

d) Linear weighted polynomial

Answer: d

Explanation: Linear weighted polynomial is used for learning element in the game playing programs.

57. Which is used to choose among multiple consistent hypotheses?

a) Razor

b) Ockham razor

c) Learning element

d) None of the mentioned

Answer: b

Explanation: Ockham razor prefers the simplest hypothesis consistent with the data intuitively.

58. What will happen if the hypothesis space contains the true function?

a) Realizable

b) Unrealizable

c) Both a & b

d) None of the mentioned

Answer: b

Explanation: A learning problem is realizable if the hypothesis space contains the true function.

59. What takes input as an object described by a set of attributes?

a) Tree

b) Graph

c) Decision graph

d) Decision tree

Answer: d

Explanation: Decision tree takes input as an object described by a set of attributes and returns a decision.

60. How the decision tree reaches its decision?

a) Single test

b) Two test

c) Sequence of test

d) No test

Answer: c

Explanation: A decision tree reaches its decision by performing a sequence of tests.

61. Factors which affect the performance of learner system does not include

a) Representation scheme used

b) Training scenario

c) Type of feedback

d) Good data structures

Answer: d

Explanation: Factors which affect the performance of learner system does not include good data structures.

62. Different learning method does not include:

a) Memorization

b) Analogy

c) Deduction

d) Introduction

Answer: d

Explanation: Different learning methods include memorization, analogy and deduction.

63. Which of the following is the model used for learning?

a) Decision trees

b) Neural networks

c) Propositional and FOL rules

d) All of the mentioned

Answer: d

Explanation: Decision trees, Neural networks, Propositional rules and FOL rules all are the models of learning.

64. Automated vehicle is an example of _____.

a) Supervised learning

b) Unsupervised learning

c) Active learning

d) Reinforcement learning

Answer: a

Explanation: In automatic vehicle set of vision inputs and corresponding actions are available to learner hence it's an example of supervised learning.

65. Following is an example of active learning:

a) News Recommender system

b) Dust cleaning machine

c) Automated vehicle

d) None of the mentioned

Answer: a

Explanation: In active learning, not only the teacher is available but the learner can ask suitable perception-action pair example to improve performance.

66. In which of the following learning the teacher returns reward and punishment to learner?

a) Active learning

b) Reinforcement learning

c) Supervised learning

d) Unsupervised learning

Answer: b

Explanation: Reinforcement learning is the type of learning in which teacher returns award or punishment to learner.

67. Decision trees are appropriate for the problems where:

a) Attributes are both numeric and nominal

b) Target function takes on a discrete number of values.

c) Data may have errors

d) All of the mentioned

Answer: d

Explanation: Decision trees can be used in all the conditions stated.

68. Which of the following is not an application of learning?

a) Data mining

b) WWW

c) Speech recognition

d) None of the mentioned

Answer: d

Explanation: All mentioned options are applications of learning.

69. Which of the following is the component of learning system?

a) Goal

b) Model

c) Learning rules

d) All of the mentioned

Answer: d

Explanation: Goal, model, learning rules and experience are the components of learning system.

70. Following is also called as exploratory learning:

a) Supervised learning

b) Active learning

c) Unsupervised learning

d) Reinforcement learning

Answer: c

Explanation: In unsupervised learning no teacher is available hence it is also called unsupervised learning.

71. Which is not a desirable property of a logical rule-based system?

a) Locality

b) Attachment

c) Detachment

d) Truth-Functionality

e) Global attribute

Answer: b

Explanation: Locality: In logical systems, whenever we have a rule of the form A => B, we can conclude B, given evidence A, without worrying about any other rules. Detachment: Once a logical proof is found for a proposition B, the proposition can be used regardless of how it was derived .That is, it can be detachment from its justification. Truth-functionality: In logic, the truth of complex sentences can be computed from the truth of the components. However, there are no Attachment properties lies in a Rule-based system. Global attribute defines a particular problem space as user specific and changes according to user's plan to problem.

72. How is Fuzzy Logic different from conventional control methods?

a) IF and THEN Approach

b) FOR Approach

c) WHILE Approach

d) DO Approach

e) Else If approach

Answer: a

Explanation: FL incorporates a simple, rule-based IF X AND Y THEN Z approach to a solving control problem rather than attempting to model a system mathematically.

73. In an Unsupervised learning

a) Specific output values are given

b) Specific output values are not given

c) No specific Inputs are given

d) Both inputs and outputs are given

e) Neither inputs nor outputs are given

Answer: b

Explanation: The problem of unsupervised learning involves learning patterns in the input when no specific output values are supplied. We cannot expect the specific output to test your result. Here the agent does not know what to do, as he is not aware of the fact what propose system will come out. We can say an ambiguous un-proposed situation.

74. Inductive learning involves finding a

a) Consistent Hypothesis

b) Inconsistent Hypothesis

c) Regular Hypothesis

d) Irregular Hypothesis

e) Estimated Hypothesis

Answer: a

Explanation: Inductive learning involves finding a consistent hypothesis that agrees with examples. The difficulty of the task depends on the chosen representation.

75. Computational learning theory analyzes the sample complexity and computational complexity of

a) Unsupervised Learning

b) Inductive learning

c) Forced based learning

d) Weak learning

e) Knowledge based learning

Answer: b

Explanation: Computational learning theory analyzes the sample complexity and computational complexity of inductive learning. There is a tradeoff between the expressiveness of the hypothesis language and the ease of learning.

76. If a hypothesis says it should be positive, but in fact, it is negative, we call it

a) A consistent hypothesis

b) A false negative hypothesis

c) A false positive hypothesis

d) A specialized hypothesis

e) A true positive hypothesis

Answer: c

Explanation: Consistent hypothesis go with examples, If the hypothesis says it should be negative but infect it is positive, it is false negative. If a hypothesis says it should be positive, but in fact, it is negative, it is false positive. In a specialized hypothesis we need to have certain restrict or special conditions.

77. Neural Networks are complex ————————with many parameters.

a) Linear Functions

b) Nonlinear Functions

c) Discrete Functions

d) Exponential Functions

e) Power Functions

Answer: b

Explanation: Neural networks parameters can be learned from noisy data and they have been used for

thousands of applications, so it varies from problem to problem and thus use nonlinear functions.

78. A perceptron is a ——————————.

a) Feed-forward neural network

b) Back-propagation algorithm

c) Back-tracking algorithm

d) Feed Forward-backward algorithm

e) Optimal algorithm with Dynamic programming

Answer: a

Explanation: A perceptron is a Feed-forward neural network with no hidden units that can be representing only linear separable functions. If the data are linearly separable, a simple weight updated rule can be used to fit the data exactly.

79. Which of the following statement is true?

a) Not all formal languages are context-free

b) All formal languages are Context free

c) All formal languages are like natural language

d) Natural languages are context-oriented free

e) Natural language is formal

Answer: a

Explanation: Not all formal languages are context-free.

80. Which of the following statement is not true?

a) The union and concatenation of two context-free languages is context-free

b) The reverse of a context-free language is context-free, but the complement need not be

c) Every regular language is context-free because it can be described by a regular grammar

d) The intersection of a context-free language and a regular language is always context-free

e) The intersection two context-free languages is context-free

Answer: e

Explanation: The union and concatenation of two context-free languages is context-free; but intersection need not be.

81. The process by which you become aware of messages through your sense is called

a) Organization

b) Sensation

c) Interpretation-Evaluation

d) Perception

Answer: d

82. Susan is so beautiful; I bet she is smart too. This is an example of

a) The halo effect

b) The primary effect

c) A self-fulfilling prophecy

d) The recency effect

Answer: a

83. _____ prevents you from seeing an individual as an individual rather than as a member of a group.

a) Cultural mores

b) Stereotypes

c) Schematas

d) Attributions

Answer: c

84. When you get fired from your job and you determine it is because your boss dislikes you, you are most likely exhibiting

a) Self-promotion

b) Fundamental attribution error

c) Over-attribution

d) Self-serving bias

Answer: d

85. Mindless processing is

a) careful, critical thinking

b) inaccurate and faulty processing

c) information processing that relies heavily on familiar schemata

d) processing that focuses on unusual or novel events

Answer: c

86. What kind of perception is used in printing?

a) Optical character recognition

b) Speech recognition

c) Perception

d) None of the mentioned

Answer: a

Explanation: In When perception is used in printing means, It is called as optical character recognition.

87. Selective retention occurs when

a) we process, store, and retrieve information that we have already selected, organized, and interpreted

b) we make choices to experience particular stimuli

c) we make choices to avoid particular stimuli

d) we focus on specific stimuli while ignoring other stimuli

Answer: a

88. Which of the following strategies would NOT be effective at improving your communication competence?

a) Recognize the people, objects, and situations remain stable over time

b) Recognize that each person's frame of perception is unique

c) Be active in perceiving

d) Distinguish facts from inference

Answer: a

89. _____ is measured by the number of mental structures we use, how abstract they are, and how elaborate they interact to shape our perceptions.

a) intrapersonal structure

b) perceptual set

c) self-justification

d) None of the above

Answer: d

90. A perception check is

a) a cognitive bias that makes us listen only to information we already agree with.

b) a method teachers use to reward good listeners in the classroom.

c) any factor that gets in the way of good listening and decreases our ability to interpret correctly.

d) a response that allows you to state your interpretation and ask your partner whether or not that interpretation is correct.

Answer: d

91. Which provides agents with information about the world they inhabit?

a) Sense

b) Perception

c) Reading

d) Hearing

Answer: b

Explanation: Perception provides agents with information about the world they inhabit.

92. What is used to initiate the perception in the environment?

a) Sensor

b) Read

c) Actuators

d) None of the mentioned

Answer: a

Explanation: A sensor is anything that can record some aspect of the environment.

93. What is the study of light?

a) Biology

b) Lightology

c) Photometry

d) All of the mentioned

Answer: c

94. How to increase the brightness of the pixel?

a) Sound

b) Amount of light

c) Surface

d) Waves

Answer: b

Explanation: The brightness of a pixel in the image is proportional to the amount of light directed towards the camera.

95. How many kinds of reflection are available in image perception?

a) 1

b) 2

c) 3

d) 4

Answer: b

Explanation: There are two kinds of reflection. They are specular and diffuse reflection.

96. What is meant by predicting the value of a state variable from the past?

a) Specular reflection

b) Diffuse reflection

c) Gaussian filter

d) Smoothing

Answer: d

Explanation: Smoothing meant predicting the value of a state variable from the past and by given evidence and calculating the present and future.

97. How many types of image processing techniques are there in image perception?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: The three image processing techniques are smoothing, edge detection and image segmentation.

98. Which is meant by assuming any two neighboring that are both edge pixels with consistent orientation?

a) Canny edge detection

b) Smoothing

c) Segmentation

d) None of the mentioned

Answer: a

Explanation: Canny edge detection is assuming any two neighboring that are edge pixels with consistent orientation.

99. What is the process of breaking an image into groups?

a) Edge detection

b) Smoothing

c) Segmentation

d) None of the mentioned

Answer: c

Explanation: Segmentation is the process of breaking an image into groups, based on the similarities of the pixels.

100. How many types of 3-D image processing techniques are there in image perception?

a) 3

b) 4

c) 5

d) 6

Answer: c

Explanation: The five types of 3-D image processing techniques are motion, binocular stereopsis, texture, shading and contour.

101. Which condition is used to cease the growth of forward chaining?

a) Atomic sentences

b) Complex sentences

c) No further inference

d) All of the mentioned

Answer:c

Explanation:Forward chain can grow by adding new atomic sentences until no further inference is made.

102. Which closely resembles propositional definite clause?

a) Resolution

b) Inference

c) Conjuction

d) First-order definite clauses

Answer:d

Explanation:Because they are disjunction of literals of which exactly one is positive.

103. What is the condition of variables in first-order literals?

a) Existentially quantified

b) Universally quantified

c) Both a & b

d) None of the mentioned

Answer:b

Explanation:First-order literals will accept variables only if they are universally quantified.

104. Which are more suitable normal form to be used with definite clause?

a) Positive literal

b) Negative literal

c) Generalized modus ponens

d) Neutral literal

Answer:c

Explanation:Definite clauses are a suitable normal form for use with generalized modus ponen.

105. Which will be the instance of the class datalog knowledge bases?

a) Variables

b) No function symbols

c) First-order definite clauses

d) None of the mentioned

Answer:b

Explanation:If the knowledge base contains no function symbols means, it is an instance of the class datalog knowledge base.

106. Which knowledge base is called as fixed point?

a) First-order definite clause are similar to propositional forward chaining

b) First-order definite clause are mismatch to propositional forward chaining

c) Both a & b

d) None of the mentioned

Answer:a

Explanation:Fixed point reached by forward chaining with first-order definiteclause are similar to those for propositional forward chaining.

107. How to eliminate the redundant rule matching attempts in the forward

chaining?

a) Decremental forward chaining

b) Incremental forward chaining

c) Data complexity

d) None of the mentioned

Answer:b

Explanation:We can eliminate the redundant rule matching attempts in the forward chaining by using incremental forward chaining.

108. From where did the new fact inferred on new iteration is derived?

a) Old fact

b) Narrow fact

c) New fact

d) All of the mentioned

Answer:c

109. Which will solve the conjuncts of the rule so that the total cost is

minimized?

a) Constraint variable

b) Conjunct ordering

c) Data complexity

d) All of the mentioned

Answer:b

Explanation:Conjunct ordering will find an ordering to solve the conjuncts of the rule premise so that the total cost is minimized.

110. How many possible sources of complexity are there in forward chaining?

a) 1

b) 2

c) 3

d) 4

Answer:c

Explanation:The three possible sources of complexity are inner loop, algorithm rechecks every rule on every iteration, algorithm might generate many facts irrelevant to the goal.

111. Which algorithm will work backward from the goal to solve a problem?

a) Forward chaining

b) Backward chaining

c) Hill-climb algorithm

d) None of the mentioned

Answer:b

Explanation:Backward chaining algorithm will work backward from the goal and it will chain the known facts that support the proof.

112. Which is mainly used for automated reasoning?

a) Backward chaining

b) Forward chaining

c) Logic programming

d) Parallel programming

Answer:c

Explanation:Logic programming is mainly used to check the working process of the system.

113. What will backward chaining algorithm will return?

a) Additional statements

b) Substitutes matching the query

c) Logical statement

d) All of the mentioned

Answer:b

Explanation:It will contains the list of goals containing a single element and returns the set of all substitutions satisfying the query.

114. How can be the goal is thought of in backward chaining algorithm?

a) Queue

b) List

c) Vector

d) Stack

Answer:d

Explanation:The goals can be thought of as stack and if all of them us satisfied means, then current

branch of proof succeeds.

115. What are used in backward chaining algorithm?

a) Conjucts

b) Substitution

c) Composition of substitution

d) None of the mentioned

Answer:c

116. Which algorithm are in more similar to backward chainiing algorithm?

a) Depth-first search algorithm

b) Breadth-first search algorithm

c) Hill-climbing search algorithm

d) All of the mentioned

Answer:a

Explanation:It is depth-first search algorithm because its space requirements are linear in the size of the proof.

117. Which problem can frequently occur in backward chaining algorithm?

a) Repeated states

b) Incompleteness

c) Complexity

d) Both a & b

Answer:d

Explanation:If there is any loop in the chain means, It will lead to incompleteness and repeated states.

118. How the logic programming can be constructed?

a) Variables

b) Expressing knowledge in a formal language

c) Graph

d) All of the mentioned

Answer:b

Explanation:Logic programming can be constructed by expressing knowledge in a formal expression and the problem can be solved by running inference process.

119. What form of negation does the prolog allows?

a) Negation as failure

b) Proposition

c) Substitution

d) Negation as success

Answer:a

120. Which is omitted in prolog unification algorithm?

a) Variable check

b) Occur check

c) Proposition check

d) Both b & c

Answer:b

Explanation:Occur check is omitted in prolog unification algorithm because of unsound inferences.

121. How many issues are available in describing degree of belief?

a) 1

b) 2

c) 3

d) 4

Answer:b

Explanation:The main issues for degree of belief are nature of the sentences and the dependance of degree of the belief.

122. What is used for probability theory sentences?

a) Conditional logic

b) Logic

c) Extension of propositional logic

d) None of the mentioned

Answer:c

Explanation:The version of probability theory we present uses an extension of propositional logic for its sentences.

123. Where does the dependance of experience is reflected in prior proability

sentences?

a) Syntactic distinction

b) Semantic distinction

c) Both a & b

d) None of the mentioned

Answer:a

Explanation:The dependance on experience is reflected in the syntactic distinction between prior probability statements.

124. Where does the degree of belief are applied?

a) Propositions

b) Literals

c) Variables

d) Statements

Answer:a

125. How many formal languages are used for stating propositions?

a) 1

b) 2

c) 3

d) 4

Answer:b

Explanation:The two formal languages used for stating propositions are propositional logic and first-order logic.

126. What is the basic element for a language?

a) Literal

b) Variable

c) Random variable

d) All of the mentioned

Answer:c

Explanation:The basic element for a langauage is the random variable, which can be thought as a part of world and its status is initially unknown.

127. How many types of random variables are available?

a) 1

b) 2

c) 3

d) 4

Answer:c

Explanation:The three types of random variables are boolean, discrete and continuous.

128. Which is the complete specification of the state of the world?

a) Atomic event

b) Complex event

c) Simple event

d) None of the mentioned

Answer:a

Explanation:An atomic event is the complete specification of the state of the world about which the event is uncertain.

129. Which variable cannot be written in entire distribution as a table?

a) Discrete

b) Continuous

c) Both a & b

d) None of the mentioned

Answer:b

Explanation:For continuous variables, it is not posible to write out the entire distribution as a table.

130. What is meant by probability density function?

a) Probability distributions

b) Continuous variable

c) Discrete variable

d) Probability distributions for Continuous variables

Answer:d

131. Which is created by using single propositional symbol?

a) Complex sentences

b) Atomic sentences

c) Composition sentences

d) None of the mentioned

Answer:b

Explanation:Atomic sentences are indivisible syntactic elements consisting of single propositional symbol.

132. Which is used to construct the complex sentences?

a) Symbols

b) Connectives

c) Logical connectives

d) All of the mentioned

Answer:c

133. How many proposition symbols are there in artificial intelligence?

a) 1

b) 2

c) 3

d) 4

Answer:b

Explanation:The two proposition symbols are true and false.

134. How many logical connectives are there in artificial intelligence?

a) 2

b) 3

c) 4

d) 5

Answer:d

Explanation:The five logical symbols are negation, conjuction, disjunction,implication and biconditional.

135. Which is used to compute the truth of any sentence?

a) Semantics of propositional logic

b) Alpha-beta pruning

c) First-order logic

d) Both a & b

Answer:a

Explanation:Because the meaning of the sentences is really needed to compute the truth.

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

a) Logical equivalence

b) Validity

c) Satisfiability

d) All of the mentioned

Answer:d

Explanation:Logical inference algorithm can be solved be using logical equivalence, Validity and satisfiability.

137. From which rule does the modus ponens are derived?

a) Inference rule

b) Module rule

c) Both a & b

d) None of the mentioned

Answer:a

Explanation:Inference rule contains the standard pattern that leads to desired goal. The best form of inference rule is modus ponens.

138. Which is also called single inference rule?

a) Reference

b) Resolution

c) Reform

d) None of the mentioned

Answer:b

Explanation:Because resolution yields a complete inference rule when coupled with any search algorithm.

139. Which form is called as conjunction of disjunction of literals?

a) Conjunctive normal form

b) Disjunctive normal form

c) Normal form

d) All of the mentioned

Answer:a

140. What can be viewed as single leteral of disjunction?

a) Multiple clause

b) Combine clause

c) Unit clause

d) None of the mentioned

Answer:c

Explanation:A single literal can be viewed as a disjunction or one literal also, called as unit clause.

141. Which is a refutation complete inference procedure for propositional logic?

a) Clauses

b) Variables

c) Propositional resolution

d) Proposition

Answer: c

Explanation: Propositional resolution is a refutation complete inference procedure for propositional logic.

142. What kind of clauses is available in Conjunctive Normal Form?

a) Disjunction of literals

b) Disjunction of variables

c) Conjunction of literals

d) Conjunction of variables

Answer: a

Explanation: First-order resolution requires the clause to be in disjunction of literals in Conjunctive Normal Form.

143. What is the condition of literals in variables?

a) Existentially quantified

b) Universally quantified

c) Quantified

d) None of the mentioned

Answer: b

Explanation: Literals that contain variables are assumed to be universally quantified.

144. Which can be converted to inferred equivalent CNF (Conjunction Normal Form) sentence?

a) Every sentence of propositional logic

b) Every sentence of inference

c) Every sentence of first-order logic

d) All of the mentioned

Answer: c

Explanation: Every sentence of first-order logic can be converted to inferred equivalent CNF(Conjunction Normal Form) sentence.

145. Which sentence will be unsatisfiable if the CNF (Conjunction Normal Form) sentence is unsatisfiable?

a) Search statement

b) Reading statement

c) Replaced statement

d) Original statement

Answer: d

Explanation: The CNF statement will be unsatisfiable just when the original sentence is unsatisfiable.

146. Which rule is equal to resolution rule of first-order clauses?

a) Propositional resolution rule

b) Inference rule

c) Resolution rule

d) None of the mentioned

Answer: a

Explanation: The resolution rule for first-order clauses is simply a lifted version of the propositional resolution rule.

147. At which state does the propositional literals are complementary.

a) If one variable is less

b) If one is the negation of the other

c) Both a & b

d) None of the mentioned

Answer: b

Explanation: Propositional literals are complementary if one is the negation of the other.

148. What is meant by factoring?

a) Removal of redundant variable

b) Removal of redundant literal

c) Addition of redundant literal

d) Addition of redundant variable

Answer: b

149. What will happen if two literals are identical?

a) Remains the same

b) Added as three

c) Reduced to one

d) None of the mentioned

Answer: c

Explanation: Propositional factoring reduces two literals to one if they are identical.

150. When the resolution is called as refutation-complete?

a) Sentence is satisfiable

b) Sentence is unsatisfiable

c) Sentence remains the same

d) None of the mentioned

Answer: b

Explanation: Resolution is refutation-complete, if a set of sentence is unsatisfiable, then resolution will always be able to derive a contradiction.

151. Computers normally solve problem by breaking them down into a series of yes-or-no decisions represented by 1s and 0s. What is the name of the logic that allows computers to assign numerical values that fail somewhere between 0 and 1?

a) Human logic

b) Fuzzy logic

c) Boolean logic

d) Operational logic

Answer: b

152. The component of an ICAI (Intelligent Computer-Asslsted Instruction) presenting information to the student is the:

a) student model

b) problem-solving expertise

c) tutoring module

d) All of the mentioned

Answer: c

153. The company that grew out of research at the MIT AI lab is:

a) AI corp

b) LMI

c) Symbolics

d) both b & c

Answer: d

154. Which technique is being investigated as an approach to automatic programming?

a) generative CAI

b) specification by example

c) All of the above

d) non-hierarchical planning

Answer: b

155. One definition of AI focuses on problem-solving methods that process:

a) smell

b) symbols

c) touch

d) algorithms

Answer: b

156. Artificial intelligence is

a) the embodiment of human intellectual capabilities within a computer.

b) a set of computer programs that produce output that would be considered to reflect intelligence if it were generated by humans.

c) the study of mental faculties through the use of mental models implemented on a computer.

d) All of the mentioned

Answer: d

157. The primary method that people use to sense their environment is:

a) reading

b) writing

c) speaking

d) seeing

Answer: d

158. The Newell and Simon program that proved theorems of Principia Mathematica was:

a) Elementary Perceiver

b) General Problem Solver

c) Logic Theorist

d) Boolean Algebra

Answer: c

159. In LISP, the function assigns . the value of a to b is

a) (setq a b)

b) (setq b a)

c) (b = a)

d) (set b = a)

Answer: b

160. The cray X-MP, IBM 3090 and connection machine can he characterized as

a) SISD

b) SIMD

c) MISD

d) MIMD

Answer: b

161. Ambiguity may be caused by:

a) syntactic ambiguity

b) multiple word meanings

c) unclear antecedents

d) All of the mentioned

Answer: d

162. Which company offers the LISP machine considered to be “the most powerful symbolic processor available”?

a) LMI

b) Symbolics

c) Xerox

d) Texas Instruments

Answer: b

163. What of the following is considered to be a pivotal event in the history of Artificial Intelligence.

a) 1949, Donald O, The organization of Behavior,

b) 1950, Computing Machinery and Intelligence.

c) 1956, Dartmouth University Conference Organized by John McCarthy

d) 1961, Computer and Computer Sense.

Answer: c

164. Natural language processing is divided into the two subfields of:

a) symbolic and numeric

b) time and motion

c) algorithmic and heuristic

d) understanding and generation

Answer: d

165. High-resolution, bit-mapped displays are useful for displaying:

a) clearer characters

b) graphics

c) more characters

d) All of the mentioned

Answer: d

166. A bidirectional feedback loop links computer modeling with:

a) artificial science

b) heuristic processing

c) human intelligence

d) cognitive science

Answer: d

167. Which of the following have people traditionally done better than computers?

a) recognizing relative importance

b) finding similarities

c) resolving ambiguity

Answer: d

168. In LISP, the function evaluates both and is

a) set

b) setq

c) add

d) eva

Answer: a

169. What takes input as an object described bya set of attributes?

a) Tree

b) Graph

c) Decision graph

d) Decision tree

Answer: d

170. How the decision tree reaches its decision?

a) Single test

b) Two test

c) Sequence of test

d) No test

Answer: c

171. Ambiguity may be caused by:

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c) unclear antecedents

d) All of the mentioned

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178. In LISP, the function evaluates both and is

a) set

b) setq

c) add

d) eva

Answer: a

179. Which type of actuator generates a good deal of power but tends to be messy?

a) electric

b) hydraulic

c) pneumatic

d) Both b & c

Answer: b

180. Research scientists all over the world are taking steps towards building computers with circuits patterned after the complex inter connections existing among the human brain's nerve cells. What name is given to such type of computers?

a) Intelligent computers

b) Supercomputers

c) Neural network computers

d) Smart computers

Answer: c

181.Which search is equal to minimax search but eliminates the branchesthat can't influence the final decision?

a) Depth-first search

b) Breadth-first search

c) Alpha-beta pruning

d) None of the mentioned

Answer: c

182. Which values are independant in minimax search algorithm?

a) Pruned leaves x and y

b) Every states are dependant

c) Root is independant

d) None of the mentioned

Answer: a

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

a) 10 states

b) 8 States

c) 6 States

d) Any depth

Answer: d

184.Which search is similar to minimax search?

a) Hill-climbing search

b) Depth-first search

c) Breadth-first search

d) All of the mentioned

Answer: b

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

a) Alpha = max

b) Beta = min

c) Beta = max

d) Both a & b

Answer: d

186.Where does the values of alpha-beta search get updated?

a) Along the path of search

b) Initial state itself

c) At the end

d) None of the mentioned

Answer: a

187.How the effectiveness of the alpha-beta pruning gets increased?

a) Depends on the nodes

b) Depends on the order in which they are executed

c) Both a & b

d) None of the mentioned

Answer: a

188.What is called as transposition table?

a) Hash table of next seen positions

b) Hash table of previously seen positions

c) Next value in the search

d) None of the mentioned

Answer: b

189.Which is identical to the closed list in Graph search?

a) Hill climbing search algorithm

b) Depth-first search

c) Transposition table

d) None of the mentioned

Answer: c

190.Which function is used to calculate the feasibility of whole game tree?

a) Evaluation function

b) Transposition

c) Alpha-beta pruning

d) All of the mentioned

Answer: a

191.What is the action of task environment in artificial intelligence?

a) Problem

b) Solution

c) Agent

d) Observation

Answer: a

192.What is the expansion if PEAS in task environment?

a) Peer, Environment, Actuators, Sense

b) Perceiving, Enivornment, Actuators, Sensors

c) Performance, Environment, Actuators, Sensors,

d) None of the mentioned

Answer: c

193.What kind of observing environments are present in artificial intelligence?

a) Partial

b) Fully

c) Learning

d) Both a & b

Answer: d

194.What kind of environment is strategic in artificial intelligence?

a) Deterministic

b) Rational

c) Partial

d) Stochastic

Answer: a

195.What kind of environment is crossword puzzle?

a) Static

b) Dynamic

c) Semidynamic

d) None of the mentioned

Answer: a

196.What kind of behavior does the stochastic environment posses?

a) Local

b) Deterministic

c) Ratioanl

d) Primary

Answer: a

197.Which is used to select the particular environment to run the agent?

a) Environment creator

b) Environment Generator

c) Both a & b

d) None of the mentioned

Answer: b

198.Which environment is called as semidynamic?

a) Environment does not change with the passage of time

b) Agent performance changes

c) Environment will be changed

d) Both a & b

Answer: d

199.Where does the performance measure is included?

a) Rational agent

b) Task environment

c) Actuators

d) Sensor

Answer: b

200.Which is used to provide the feedback to the learning element?

a) Critic

b) Actuators

c) Sensor

d) None of the mentioned

Answer: a

201.Given a stream of text, Named Entity Recognition determines which pronoun maps to which noun.

a) False

b) True

Answer: a

202.Natural Language generation is the main task of Natural language processing.

a) True

b) False

Answer: a

203.OCR (Optical Character Recognition) uses NLP.

a) True

b) False

Answer: a

204.Parts-of-Speech tagging determines

a) part-of-speech for each word

b) part-of-speech for each word dynamically as per sentence structure and meaning

c) all part-of-speech for a specific word given as input

d) all of the mentioned

Answer: b, c

205.Parsing determines Parse Trees (Grammatical Analysis) for a given sentence.

a) True

b) False

Answer: a

206.IR (information Retrieval) and IE (Information Extraction) are the two same thing.

a) True

b) False

Answer: b

207.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) Word Sense Disambiguation

c) Shallow Semantic Analysis

d) All of the mentioned

Answer: b

208.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

Answer: b

209.Speech Segmentation is a subtask of Speech Recognition.

a) True

b) False

Answer: a

210. In linguistic morphology, _____ is the process for reducing inflected words to their root form.

a) Rooting

b) Stemming

c) Text-Proofing

d) Both a & b

Answer: b

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