Advanced Neural Network

Multiple Choice Questions and Answers:-

1. Fuzzy logic is a form of

a) Two-valued logic

b) Crisp set logic

c) Many-valued logic

d) Binary set logic

Answer: c

Explanation: With fuzzy logic set membership is defined by certain value. Hence it could have many values to be in the set.

2. Traditional set theory is also known as Crisp Set theory.

a) True

b) False

Answer: a

Explanation: Traditional set theory set membership is fixed or exact either the member is in the set or not. There is only two crisp values true or false. In case of fuzzy logic there are many values. With weight say x the member is in the set.

3. The truth values of traditional set theory is _____ and that of fuzzy set is _____

a) Either 0 or 1, between 0 & 1

b) Between 0 & 1, either 0 or 1

c) Between 0 & 1, between 0 & 1

d) Either 0 or 1, either 0 or 1

Answer: a

Explanation: Refer the definition of Fuzzy set and Crisp set.

4. Fuzzy logic is extension of Crisp set with an extension of handling the concept of Partial Truth.

a) True

b) False

Answer: a

5. 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.

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

a) Fuzzy Set

b) Crisp Set

Answer: a

Explanation: Fuzzy logic deals with linguistic variables.

7. The values of the set membership is represented by

a) Discrete Set

b) Degree of truth

c) Probabilities

d) Both b & c

Answer: b

Explanation: Both Probabilities and degree of truth ranges between 0 – 1.

8. What is meant by probability density function?

a) Probability distributions

b) Continuous variable

c) Discrete variable

d) Probability distributions for Continuous variables

Answer: d

9. Japanese were the first to utilize fuzzy logic practically on high-speed trains in Sendai.

a) True

b) False

Answer: a

10. Which of the following 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.

11. Fuzzy Set theory defines fuzzy operators. Choose the fuzzy operators from the following.

a) AND

b) OR

c) NOT

d) EX-OR

Answer: a, b, c

Explanation: The AND, OR, and NOT operators of Boolean logic exist in fuzzy logic, usually defined as the minimum, maximum, and complement;

12. There are also other operators, more linguistic in nature, called _____ that can be applied to fuzzy set theory.

a) Hedges

b) Lingual Variable

c) Fuzz Variable

d) None of the mentioned

Answer: a

13. Where does the Bayes rule can be used?

a) Solving queries

b) Increasing complexity

c) Decreasing complexity

d) Answering probabilistic query

Answer: d

Explanation: Bayes rule can be used to answer the probabilistic queries conditioned on one piece of evidence.

14. What does the Bayesian network provides?

a) Complete description of the domain

b) Partial description of the domain

c) Complete description of the problem

d) None of the mentioned

Answer: a

Explanation: A Bayesian network provides a complete description of the domain.

15. Fuzzy logic is usually represented as

a) IF-THEN-ELSE rules

b) IF-THEN rules

c) Both a & b

d) None of the mentioned

Answer: b

Explanation: Fuzzy set theory defines fuzzy operators on fuzzy sets. The problem in applying this is that the appropriate fuzzy operator may not be known. For this reason, fuzzy logic usually uses IF-THEN rules, or constructs that are equivalent, such as fuzzy associative matrices.

Rules are usually expressed in the form:

IF variable IS property THEN action

16. Like relational databases there does exists fuzzy relational databases.

a) True

b) False

Answer: a

Explanation: Once fuzzy relations are defined, it is possible to develop fuzzy relational databases. The first fuzzy relational database, FRDB, appeared in Maria Zemankova's dissertation.

17. _____ is/are the way/s to represent uncertainty.

a) Fuzzy Logic

b) Probability

c) Entropy

d) All of the mentioned

Answer: d

Explanation: Entropy is amount of uncertainty involved in data. Represented by H(data).

18. _____ are algorithms that learn from their more complex environments (hence eco) to generalize, approximate and simplify solution logic.

a) Fuzzy Relational DB

b) Ecorithms

c) Fuzzy Set

d) None of the mentioned

Answer: c

Explanation: Local structure is usually associated with linear rather than exponential growth in complexity.

19. Which condition is used to influence a variable directly by all the others?

a) Partially connected

b) Fully connected

c) Local connected

d) None of the mentioned

Answer: b

20. What is the consequence between a node and its predecessors while creating Bayesian network?

a) Conditionally dependent

b) Dependent

c) Conditionally independent

d) Both a & b

Answer: c

Explanation: The semantics to derive a method for constructing Bayesian networks were led to the consequence that a node can be conditionally independent of its predecessors.

21. How many terms are required for building a Bayesian model?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: The three required terms are a conditional probability and two unconditional probability.

22. What is needed to make probabilistic systems feasible in the world?

a) Reliability

b) Crucial robustness

c) Feasibility

d) None of the mentioned

Answer: b

Explanation: On a model-based knowledge provides the crucial robustness needed to make probabilistic system feasible in the real world.

23. Where does the Bayes rule can be used?

a) Solving queries

b) Increasing complexity

c) Decreasing complexity

d) Answering probabilistic query

Answer: d

Explanation: Bayes rule can be used to answer the probabilistic queries conditioned on one piece of evidence.

14. What does the Bayesian network provides?

a) Complete description of the domain

b) Partial description of the domain

c) Complete description of the problem

d) None of the mentioned

Answer: a

Explanation: A Bayesian network provides a complete description of the domain.

25. How the entries in the full joint probability distribution can be calculated?

a) Using variables

b) Using information

c) Both a & b

d) None of the mentioned

Answer: b

Explanation: Every entry in the full joint probability distribution can be calculated from the information in the network.

26. How the Bayesian network can be used to answer any query?

a) Full distribution

b) Joint distribution

c) Partial distribution

d) All of the mentioned

Answer: b

Explanation: If a Bayesian network is a representation of the joint distribution, then it can solve any query, by summing all the relevant joint entries.

27. How the compactness of the Bayesian network can be described?

a) Locally structured

b) Fully structured

c) Partial structure

d) All of the mentioned

Answer: a

Explanation: The compactness of the Bayesian network is an example of a very general property of a locally structured systems.

28. To which does the local structure is associated?

a) Hybrid

b) Dependent

c) Linear

d) None of the mentioned

Answer: c

Explanation: Local structure is usually associated with linear rather than exponential growth in complexity.

29. Which condition is used to influence a variable directly by all the others?

a) Partially connected

b) Fully connected

c) Local connected

d) None of the mentioned

Answer: b

30. What is the consequence between a node and its predecessors while creating Bayesian network?

a) Conditionally dependent

b) Dependent

c) Conditionally independent

d) Both a & b

Answer: c

Explanation: The semantics to derive a method for constructing Bayesian networks were led to the consequence that a node can be conditionally independent of its predecessors.

31. The primary interactive method of communication used by humans is:

a) reading

b) writing

c) speaking

d) All of the mentioned

Answer: c

32. Elementary linguistic units which are smaller than words are:

a) allophones

b) phonemes

c) syllables

d) All of the mentioned

Answer: d

33. In LISP, the atom that stands for “true” is

a) t

b) ml

c) y

d) time

Answer: a

34. A mouse device may be:

a) electro-chemical

b) mechanical

c) optical

d) both b and c

Answer: d

35. An expert system differs from a database program in that only an expert system:

a) contains declarative knowledge

b) contains procedural knowledge

c) features the retrieval of stored information

d) expects users to draw their own conclusions

Answer: b

36. Arthur Samuel is linked inextricably with a program that played:

a) checkers

b) chess

c) cricket

d) football

e) None of the mentioned

Answer: a

37. Natural language understanding is used in:

a) natural language interfaces

b) natural language front ends

c) text understanding systems

d) All of the mentioned

Answer: d

38. Which of the following are examples of software development tools?

a) debuggers

b) editors

c) assemblers, compilers and interpreters

d) All of the mentioned

Answer: d

39. The first AI programming language was called:

a) BASIC

b) FORTRAN

c) IPL(Inductive logic programming)

d) LISP

Answer: d

40. The Personal Consultant is based on:

a) EMYCIN

b) OPS5+

c) XCON

d) All of the mentioned

Answer: d

41. Machine learning is

a) The autonomous acquisition of knowledge through the use of computer programs

b) The autonomous acquisition of knowledge through the use of manual programs

e) The selective acquisition of knowledge through the use of computer programs

d) The selective acquisition of knowledge through the use of manual programs

e) None of the mentioned

Answer: a

Explanation: Machine learning is the autonomous acquisition of knowledge through the use of computer programs.

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

a) Representation scheme used

b) Training scenario

e) Type of feedback

d) Good data structures

e) Learning algorithm

Answer: d

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

43. Different learning methods does not include

a) Memorization

b) Analogy

e) Deduction

d) Introduction

e) Acceptance

Answer: d

Explanation: Different learning methods does not include introduction.

44. In language understanding, the levels of knowledge that does not include

a) Phonological

b) Syntactic

e) Semantic

d) Logical

e) Empirical

Answer: e

Explanation: In language understanding, the levels of knowledge that does not include empirical knowledge.

45. A model of language consists of the categories which does not include

a) Language units

b) Role structure of units

e) System constraints

d) Structural units

e) Components

Answer: d

Explanation: A model of language consists of the categories which does not include structural units.

46. Semantic grammars

a) Encode semantic information into a syntactic grammar

b) Decode semantic information into a syntactic grammar

e) Encode syntactic information into a semantic grammar

d) Decode syntactic information into a semantic grammar

e) Encode syntactic information into a logical grammar

Answer: a

Explanation: Semantic grammars encode semantic information into a syntactic grammar.

47. What is a top-down parser?

a) Begins by hypothesizing a sentence (the symbol S) and successively predicting lower level constituents until individual preterminal symbols are written

b) Begins by hypothesizing a sentence (the symbol S) and successively predicting upper level constituents until individual preterminal symbols are written

e) Begins by hypothesizing lower level constituents and successively predicting a sentence (the symbol S)

d) Begins by hypothesizing upper level constituents and successively predicting a sentence (the symbol S)

e) All the mentioned

Answer: a

Explanation: A top-down parser begins by hypothesizing a sentence (the symbol S) and successively predicting lower level constituents until individual preterminal symbols are written.

48. Perception involves

a) Sights, sounds, smell and touch

b) Hitting

e) Boxing

d) Dancing

e) Acting

Answer: a

Explanation: Perception involves Sights, sounds, smell and touch.

49. Among the following which is not a horn clause?

a) p

b) Øp V q

e) p ? q

d) p ? Øq

e) All of the mentioned

Answer: d

Explanation: p ? Øq is not a horn clause.

50. The action ‘STACK(A, B)’ of a robot arm specify to

a) Place block B on Block A

b) Place blocks A, B on the table in that order

e) Place blocks B, A on the table in that order

d) Place block A on block B

e) POP A, B from stack.

Answer: d

Explanation: The action ‘STACK(A,B)’ of a robot arm specify to Place block A on block B.

51. What is the extraction of the meaning of utterance?

a) Syntactic

b) Semantic

c) Pragmatic

d) None of the mentioned

Answer: b

Explanation: Semantic analysis is used to extract the meaning from the group of sentences.

52. What is the process of associating an FOL expression with a phrase?

a) Interpretation

b) Augment reality

c) Semantic interpretation

d) Augment interpretation

Answer: c

Explanation: Semantic interpretation is the process of associating an FOL expression with a phrase.

53. What is meant by compositional semantics?

a) Determining the meaning

b) Logical connectives

c) Semantics

d) None of the mentioned

Answer: a

Explanation: Compositional semantics is the process of determining the meaning of P*Q from P, Q and *.

54. What is used to augment a grammar for arithmetic expression with semantics?

a) Notation

b) DCG (definite clause grammar) notation

c) Constituent

d) All of the mentioned

Answer: b

Explanation: DCG (definite clause grammar) notation is used to augment a grammar for arithmetic expression with semantics and it is used to build a parse tree.

55. What can’t be done in the semantic interpretation?

a) Logical term

b) Complete logical sentence

c) Both a & b

d) None of the mentioned

Answer: c

Explanation: Some kind of sentence in the semantic interpretation can't be logical term or a complete logical sentence.

56. How many verb tenses are there in English language?

a) 1

b) 2

c) 3

d) 4

Answer: c

Explanation: There are three types of tenses available in English language are past, present and future.

57. Which is used to mediate between syntax and semantics?

a) Form

b) Intermediate form

c) Grammar

d) All of the mentioned

Answer: b

58. What is meant by quasi-logical form?

a) Sits between syntactic and logical form

b) Logical connectives

c) Both a & b

d) None of the mentioned

Answer: a

Explanation: It can be translated into a regular first-order logical sentence, So that it Sits between syntactic and logical form.

59. How many types of quantification are available in artificial intelligence?

a) 1

b) 2

c) 3

d) 4

Answer: b

Explanation: There are two types of quantification available. They are universal and existential.

60. What kind of interpretation is done by adding context dependent information?

a) Semantic

b) Syntactic

c) Pragmatic

d) None of the mentioned

Answer: c

61. 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.

62. Which closely resembles propositional definite clause?

a) Resolution

b) Inference

c) Conjunction

d) First-order definite clauses

Answer: d

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

63. 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.

54. Which is 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.

65. Which will be the instance of the class data log 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 data log knowledge base.

66. Which knowledge base is called as fixed point?

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

b) First-order definite clause is 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 definite clause are similar to those for propositional forward chaining.

67. 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.

68. 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

69. 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.

70. 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, and algorithm might generate many facts irrelevant to the goal.

71. 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

72. Decision Tree is a display of an algorithm.

a) True

b) False

Answer: a

73. 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

74. Decision Trees can be used for Classification Tasks.

a) True

b) False

Answer: a

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

a) 1

b) 2

c) 3

d) 4

Answer: c

76. 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

77. Decision Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: b

78. Chance Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: c

79. End Nodes are represented by,

a) Disks

b) Squares

c) Circles

d) Triangles

Answer: d

80. How the decision tree reaches its decision?

a) Single test

b) Two test

c) Sequence of test

d) No test

Answer: c

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

a) Simple search

b) Heuristic search

c) Online search

d) None of the mentioned

Answer: b

82. How many types of informed search method are in artificial intelligence?

a) 1

b) 2

c) 3

d) 4

Answer: d

83. Which search uses the problem specific knowledge beyond the definition of the problem?

a) Informed search

b) Depth-first search

c) Breadth-first search

d) Uninformed search

Answer: a

84. Which function will select the lowest expansion node atfirst for evaluation?

a) Greedy best-first search

b) Best-first search

c) Both a & b

d) None of the mentioned

Answer: b

85. What is the heuristic function of greedy best-first search?

a) f(n) != h(n)

b) f(n) < h(n)

c) f(n) = h(n)

d) f(n) > h(n)

Answer: c

86. Which search uses only the linear space for searching?

a) Best-first search

b) Recursive best-first search

c) Depth-first search

d) None of the mentioned

Answer: b

87. Which method is used to search better by learning?

a) Best-first search

b) Depth-first search

c) Metalevel state space

d) None of the mentioned

Answer: c

88. Which search is complete and optimal when h(n) is consistent?

a) Best-first search

b) Depth-first search

c) Both a & b

d) A* search

Answer: d

89. Which is used to improve the performance of heuristic search?

a) Quality of nodes

b) Quality of heuristic function

c) Simple form of nodes

d) None of the mentioned

Answer: b

90. Which search method will expand the node that is closest to the goal?

a) Best-first search

b) Greedy best-first search

c) A* search

d) None of the mentioned

Answer: b

91. Which data structure is used to give better heuristic estimates?

a) Forwards state-space

b) Backward state-space

c) Planning graph algorithm

d) None of the mentioned

Answer: c

92. Which is used to extract solution directly from the planning graph?

a) Planning algorithm

b) Graph plan

c) Hill-climbing search

d) All of the mentioned

Answer: b

93. What are present in the planning graph?

a) Sequence of levels

b) Literals

c) Variables

d) Heuristic estimates

Answer: a

94. What is the starting level of planning graph?

a) Level 3

b) Level 2

c) Level 1

d) Level 0

Answer: d

95. What are present in each level of planning graph?

a) Literals

b) Actions

c) Variables

d) Both a & b

Answer: d

96. Which kind of problem is suitable for planning graph?

a) Propositional planning problem

b) Planning problem

c) Action problem

d) None of the mentioned

Answer: a

97. What is meant by persistence actions?

a) Allow a literal to remain false

b) Allow a literal to remain true

c) Both a & b

d) None of the mentioned

Answer: b

98. When will further expansion is unnecessary for planning graph?

a) Identical

b) Replicate

c) Not identical

d) None of the mentioned

Answer: a

99. How many conditions are available between two actions in mutex relation?

a) 1

b) 2

c) 3

d) 4

Answer: c

100. What is called inconsistent support?

a) If two literals are not negation of other

b) If two literals are negation of other

c) Mutually exclusive

d) None of the mentioned

Answer: b