

# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - Machine Learning

Course Code - PEC-MCS201A

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- M.SC.(MM)
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Answer all the questions. Each question carry one mark.

9. 1.Which of the following is usually the last step in the data mining process?

*Mark only one oval.*

- Visualization
- Preprocessing
- Modeling
- Deployment

10. 2.Name of a movie, can be considered as an attribute of type?

*Mark only one oval.*

- Nominal
- Ordinal
- Interval
- Ratio

11. 3.User rating given to a movie in a scale 1-10, can be considered as an attribute of type?

*Mark only one oval.*

- Nominal
- Ordinal
- Interval
- Ratio

12. 4.Sales database of items in a supermarket can be considered as an example of:

*Mark only one oval.*

- Record data
- Tree data
- Graph data
- None of the above

13. 5.Rows of a data matrix storing record data usually represents?

*Mark only one oval.*

- Metadata
- Objects
- Attributes
- Aggregates

14. 6.If a record data matrix has reduced number of columns after a transformation, the transformation has performed:

*Mark only one oval.*

- Data sampling
- Dimensionality reduction
- Noise cleaning
- Discretization

15. 7.Decision tree is an algorithm for:

*Mark only one oval.*

- Classification
- Clustering
- Association rule mining
- Noise filtering

16. 8.Non-leaf nodes of a decision tree correspond to:

*Mark only one oval.*

- Attributes
- Classes
- Data instances
- None of the above

17. 9.The purpose of pruning a decision tree is:

*Mark only one oval.*

- improving training set classification accuracy
- improving generalization performance
- dimensionality reduction
- tree balancing

18. 10.Decision trees can be used for:

*Mark only one oval.*

- Classification only
- Regression only
- Both classification and regression
- Neither of classification and regression

19. 11. Maximum a posteriori classifier is also known as:

*Mark only one oval.*

- Decision tree classifier
- Bayes classifier
- Gaussian classifier
- Maximum margin classifier

20. 12. Let  $x$  be an example, and  $C$  be a class. The probability  $P(C)$  is known as:

*Mark only one oval.*

- Apriori probability
- Aposteriori probability
- Class conditional probability
- None of the above

21. 13. Consider two binary attributes  $X$  and  $Y$ . We know that the attributes are independent and probability  $P(X=1) = 0.6$ , and  $P(Y=0) = 0.4$ . What is the probability that both  $X$  and  $Y$  have values 1?

*Mark only one oval.*

- 0.06
- 0.16
- 0.26
- 0.36



22. 14.Support vector machine may be termed as:

*Mark only one oval.*

- Maximum aprori classifier
- Maximum margin classifier
- Minimum apriori classifier
- Minimum margin classifier

23. 15.In a hard margin support vector machine:

*Mark only one oval.*

- No training instances lie inside the margin
- All the training instances lie inside the margin
- Only few training instances lie inside the margin
- None of the above

24. 16.The generalization constant C is used to tune the:

*Mark only one oval.*

- test error only
- training error only
- relative weightage to training and test error
- none of the above

25. 17.The logic function that cannot be implemented by a perceptron having two inputs is?

*Mark only one oval.*

- AND
- OR
- NOR
- XOR

26. 18.A multi-layered perceptron is usually trained using:

*Mark only one oval.*

- margin maximization algorithm
- single linkage algorithm
- belief propagation algorithm
- backpropagation algorithm

27. 19.Overfitting is expected when we observe that?

*Mark only one oval.*

- With training iterations error on training set as well as test set decreases
- With training iterations error on training set decreases but test set increases
- With training iterations error on training set as well as test set increases
- With training iterations training set as well as test set error remains constant

28. 20.Which of the following clustering algorithm uses a dendrogram?

*Mark only one oval.*

- Complete linkage clustering
- K-means clustering
- DBSCAN
- None of the above

29. 21.Which of the following is not true about K-means clustering algorithm?

*Mark only one oval.*

- It is a partitional clustering algorithm
- The final cluster obtained depends on the choice of initial cluster centres
- Number of clusters need to be specified in advance
- It can generate non-convex cluster shapes

30. 22.Regression is used in:

*Mark only one oval.*

- predictive data mining
- exploratory data mining
- descriptive data mining
- explanative data mining

31. 23.The output of a regression algorithm is usually a:

*Mark only one oval.*

- real variable
- integer variable
- character variable
- string variable

32. 24.Accuracy of a linear regression model usually has?

*Mark only one oval.*

- low bias and low variance
- low bias but high variance
- high bias but low variance
- High bias and high variance

33. 25.A time series prediction problem is often solved using?

*Mark only one oval.*

- Multivariate regression
- Autoregression
- Logistic regression
- Sinusoidal regression

34. 26.What is global stability?

*Mark only one oval.*

- when both synaptic & activation dynamics are simultaneously used & are in equilibrium
- when only synaptic dynamics in equilibrium
- none of the mentioned
- All of the above

35. 27.Who proposed the shunting activation model?

*Mark only one oval.*

- Rosenblatt
- hopfield
- perkel
- grossberg

36. 28.What was the goal of shunting activation model?

*Mark only one oval.*

- to make system dynamic
- to keep operating range of activation value to a specified range
- to make system static
- can be either for dynamic or static, depending on inputs

37. 29. What is meant by generalized in statement backpropagation is a generalized delta rule?

*Mark only one oval.*

- because delta rule can be extended to hidden layer units
- because delta is applied to only input and output layers, thus making it more simple and generalized
- it has no significance
- none of the mentioned

38. 30. What are the general tasks that are performed with backpropagation algorithm?

*Mark only one oval.*

- pattern mapping
- function approximation
- prediction
- all of the mentioned

39. 31. How can learning process be stopped in backpropagation rule?

*Mark only one oval.*

- there is convergence involved
- no heuristic criteria exist
- on basis of average gradient value
- none of the mentioned

40. 32.Which approach is most suited to structured problems with little uncertainty?

*Mark only one oval.*

- Simulation
- Human intuition
- Optimization
- Genetic algorithms

41. 33.Which approach is most suited to complex problems with significant uncertainty, a need for experimentation, and time compression?

*Mark only one oval.*

- Simulation
- Optimization
- Human intuition
- Genetic algorithms

42. 34.In which stage of the simulation methodology do you determine the variables and gather data

*Mark only one oval.*

- Defining the problem
- Constructing the simulation model
- Testing and validating the model
- Designing the experiment

43. 35. In which stage of the simulation methodology do you determine the system's boundaries and environment?

*Mark only one oval.*

- Constructing the simulation model
- Defining the problem
- Testing and validating the mode
- Designing the experiment

44. 36. What BEST describes a simulation model with a limited number of variables, each with a finite number of values?

*Mark only one oval.*

- System dynamics simulation
- Discrete event simulation
- Continuous distribution simulation
- Monte Carlo simulation

45. 37. Core of soft Computing is

*Mark only one oval.*

- Fuzzy Computing, Neural Computing, Genetic Algorithms
- Fuzzy Networks and Artificial Intelligence
- Artificial Intelligence and Neural Science
- Neural Science and Genetic Science



46. 38.Artificial intelligence is

*Mark only one oval.*

- It uses machine-learning techniques. Here program can learn From past experience and adapt themselves to new situations
- Computational procedure that takes some value as input and produces some value as output.
- Science of making machines performs tasks that would require intelligence when performed by humans
- None of these

47. 39.Expert systems

*Mark only one oval.*

- Combining different types of method or information
- Approach to the design of learning algorithms that is structured along the lines of the theory of evolution
- an information base filled with the knowledge of an expert formulated in terms of if-then rules
- None of these

48. 40.Falsification is

*Mark only one oval.*

- Modular design of a software application that facilitates the integration of new modules
- Showing a universal law or rule to be invalid by providing a counter example
- A set of attributes in a database table that refers to data in another table
- None of these

49. 41.Evolutionary computation is

*Mark only one oval.*

- Combining different types of method or information
- Approach to the design of learning algorithms that is structured along the lines of the theory of evolution.
- Decision support systems that contain an information base filled with the knowledge of an expert formulated in terms of if-then rules.
- None of these

50. 42.Massively parallel machine is

*Mark only one oval.*

- A programming language based on logic
- A computer where each processor has its own operating system, its own memory, and its own hard disk
- Describes the structure of the contents of a database.
- None of these

51. 43.Search space

*Mark only one oval.*

- The large set of candidate solutions possible for a problem
- The information stored in a database that can be, retrieved with a single query.
- Worth of the output of a machine learning program that makes it understandable for humans
- None of these

52. 44.Shallow knowledge

*Mark only one oval.*

- The large set of candidate solutions possible for a problem
- The information stored in a database that can be, retrieved with a single query
- Worth of the output of a machine learning program that makes it understandable for humans
- None of these

53. 45.Neural Computing

*Mark only one oval.*

- mimics human brain
- information processing paradigm
- Both (a) and (b)
- None of the above

54. 46.What are the 2 types of learning

*Mark only one oval.*

- Improvised and unimprovised
- supervised and unsupervised
- Layered and unlayered
- None of the above

55. 47.Supervised Learning is

*Mark only one oval.*

- learning with the help of examples
- learning without teacher
- learning with the help of teacher
- learning with computers as supervisor

56. 48.A Neural Network can answer

*Mark only one oval.*

- For Loop questions
- What-if questions
- IF-The-Else Analysis Questions
- None of these

57. 49.Ability to learn how to do tasks based on the data given for training or initial experience

*Mark only one oval.*

- Self-Organization
- Adaptive Learning
- Fault tolerance
- Robustness

58. 50.Feature of ANN in which ANN creates its own organization or representation of information it receives during learning time is

*Mark only one oval.*

- Adaptive Learning
- Self-Organization
- What-If Analysis
- Supervised Learning

59. 51.Each connection link in ANN is associated with \_\_\_\_\_ which has information about the input signal.

*Mark only one oval.*

- neurons
- weights
- bias
- activation function

60. 52.Neuron can send \_\_\_\_\_ signal at a time.

*Mark only one oval.*

- multiple
- one
- none
- any number of

61. 53. 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. What will be the output?

*Mark only one oval.*

- 238
- 76
- 119
- 123

62. 54. 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.

*Mark only one oval.*

- All of the mentioned are true
- (ii) and (iii) are true
- (i), (ii) and (iii) are true
- None of the mentioned

63. 55. What was the 2nd stage in perceptron model called?

*Mark only one oval.*

- sensory units
- summing unit
- association unit
- output unit

64. 56.What is adaline in neural networks?

*Mark only one oval.*

- adaptive linear element
- automatic linear element
- adaptive line element
- none of the mentioned

65. 57.Who invented the adaline neural model?

*Mark only one oval.*

- Rosenblatt
- Hopfield
- Werbos
- Widrow

66. 58.In adaline model what is the relation between output & activation value(x)?

*Mark only one oval.*

- linear
- nonlinear
- can be either linear or non-linear
- none of the mentioned

67. 59.The fundamental unit of network is

*Mark only one oval.*

- brain
- nucleus
- neuron
- axon

68. 60.State whether Hebb's law is supervised learning or of unsupervised type?

*Mark only one oval.*

- Supervised
- unsupervised
- either supervised or unsupervised
- can be both supervised & unsupervised

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