

Total No. of Questions : 5]

SEAT No. :

P6991

[5865] - 304

[Total No. of Pages : 4

S.Y. M.C.A. (Mgmt. Faculty)

**IT - 34 : KNOWLEDGE REPRESENTATION AND
ARTIFICIAL INTELLIGENCE : ML, DL
(2020 Pattern) (Semester - III)**

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All Questions are compulsory.*
- 2) *For MCQ select appropriate choice from options given.*
- 3) *From Q2 to Q5 having Internal choice.*
- 4) *Figures to right indicate full marks.*

Q1) Multiple Choice Questions.

[20×½=10]

- i) _____ knowledge describe relationship between various objects such as kind of, part of .
 - a) Declarative
 - b) Procedural
 - c) Structural
 - d) Heuristic
- ii) The wumpus world is a cave with _____ rooms.
 - a) 8
 - b) 16
 - c) 4
 - d) 12
- iii) _____ graph is useful for representing solution of problems that can be solved by decomposing them into a set of smaller problems.
 - a) AND graph
 - b) OR graph
 - c) AND - OR graph
 - d) Adjacency graph
- iv) What will backward chaining algorithm return?
 - a) Additional statements
 - b) Substitutes matching the query
 - c) Logical Statement
 - d) Final goal
- v) What is meant by compositional semantics?
 - a) Determining meaning
 - b) Logical connectivities
 - c) Semantics
 - d) Grammar
- vi) Inference algorithm is complete, only if it
 - a) can derive any sentence
 - b) can derive any sentence that is an entailed version
 - c) is truth preserving
 - d) it can derive any sentence that is an entailed version and it is truth preserving

P.T.O.

- vii) Which of the following evaluation metrics can be used to evaluate a model while modeling a continuous output variable?
- auc-roc
 - accuracy
 - logloss
 - mean-squared error
- viii) The average squared difference between classifier predicted output and actual output
- mean squared error
 - root mean squared error
 - mean absolute error
 - mean relative error
- ix) Naive Bayes classifiers are a collection _____ of algorithms.
- Classification
 - Clustering
 - Regression
 - All
- x) Selecting data so as to assure that each class is properly represented in both the training and test data.
- Cross-Validation
 - Stratification
 - Verification
 - Boot strapping
- xi) The most common Neural Networks consists of _____ network layers.
- 1
 - 2
 - 3
 - 4
- xii) If there is only a discrete number of possible outcomes (Called Categories), the process become a
- Regression
 - Classification
 - Model free
 - Categories
- xiii) ANN used for
- Pattern Recognition
 - Classification
 - Clustering
 - All
- xiv) RNN stands for
- Recurrent Neural Network
 - ReLU Neural Network
 - Regenerate Neural Network
 - Reverse Neural Network
- xv) GAN stands for
- Generative Advert Networks
 - Generative Adversarial Networks
 - General Advert Networks
 - General Adversarial Networks
- xvi) ReLU stands for
- Rectified Linear Unit function
 - Rectified Linear Unit formula
 - Rectified Loss Unit function
 - Reverse Linear Unit function

- xvii) Which neural network has only one hidden layer between the Input and Output?
- Shallow neural network
 - Deep neural network
 - Feed forward neural network
 - Recurrent neural network
- xviii) Which of the following is/are limitations of deep learning?
- Data labeling
 - Obtain huge training data sets
 - Data labeling and obtain huge training data sets
 - None of these
- xix) The FPGAs can be used to implement _____
- a Software design
 - Hardware design
 - both Hardware & Software designs
 - none
- xx) Which of the following most advanced form of AI?
- Neural Network
 - Machine learning
 - Data Science
 - Deep learning

- Q2)** a) What is Artificial Intelligence? Discuss the main branches of Artificial Intelligences. [4]
- b) Show that “If I look into the sky and I am alert then, I will see a dim star or if I am not alert then I will not see a dim star” is valid. [6]

OR

- a) Write a FOL of following statements: [6]
- None of my friends are perfect.
 - Every student smiles.
 - Every student walks or talks.
 - Every student who loves Yash is Happy.
 - Anyone who loves everyone loves himself.
 - Someone Dance and someone singing.
- b) Explain properties of good knowledge Based system. [4]

- Q3)** a) Differentiate between supervised and unsupervised learning. [4]
 b) The values of independent variable x and dependent variable y are given below.

x	0	1	2	3	4
y	2	3	5	4	6

Find the least square regression line $y = ax + b$. Estimate the value of y when x is 10. [6]

OR

- a) To evaluate the performance of a trained model confusion matrix plotted which is given below. [6]

True label	0	1
	61	3
1	3	104

Predicated label

- b) Define machine learning? Briefly explain the types of machine learning. [4]

- Q4)** a) Why we do use pooling layers in CNN? [4]
 b) How ReLU activation function works in CNN? [6]

OR

- a) Explain uses and application of Deep learning. [4]
 b) Why we need Back propagation? Explain Back propagation Algorithm. [6]

- Q5)** Write a short notes on [10]

- a) Application of AI.
 b) LSTM
 c) Training Data and Testing Data.
 d) Key processor of AI.
 e) NLP

OR

- a) Limitations of AI.
 b) Linear Regression.
 c) Essentials of Data Analysis.
 d) Data center.
 e) Chat bot.

