

Code: 19ES1401

II B.Tech - II Semester – Regular Examinations – AUGUST 2021

AI TOOLS
(Common to CIVIL, CSE ME)

Duration: 3 hours

Max. Marks: 70

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- Note: 1. This question paper contains two Parts A and B.
2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.
3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.
4. All parts of Question paper must be answered in one place
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PART – A

1. a) Define AI. List applications of AI.
- b) Define the following machine learning algorithms with suitable examples.
 - I. Supervised
 - II. Unsupervised
- c) Explain real time applications of Speech Recognition.
- d) Define Deep Learning. List applications of Deep Learning.
- e) What is meant by Neural Network and give any four different types of NNs?

PART – B

UNIT – I

2. a) Explain how Turing test provide acceptable operational intelligence? 6 M
- b) Explain base of philosophy in AI. 6 M

OR

3. a) What is Knowledge based system, list a few of the tasks domains of AI? 6 M
- b) Outline the different real world applications of AI. Explain any two applications in detail. 6 M

UNIT – II

4. a) With the suitable example explain the curse of dimensionality in classification. 6 M
- b) Illustrate reinforcement learning with an example? 6 M

OR

5. a) Define regression and list any five examples where regression can easily solve? 6 M
- b) Explain the implementation of Semi-supervised learning and give the most desirable situation of the Semi-supervised learning? 6 M

UNIT-III

6. a) What is meant by preprocessing and explain the role of preprocessing in computer vision? 6 M
- b) Illustrate the purpose of speech processing, and explain its role in computer based systems. 6 M

OR

7. a) What is decision making in AI? Explain decision making process with an example. 6 M
- b) What is NLP? Explain applications of NLP. 6 M

UNIT – IV

8. a) Define the Convolutional neural network. Apply Max. pooling & Min. pooling operations on following image of size 4 x 4 with stride =2 6 M

$$\begin{bmatrix} 20 & 30 & 170 & 155 \\ 15 & 16 & 122 & 130 \\ 103 & 120 & 150 & 125 \\ 150 & 180 & 180 & 360 \end{bmatrix}$$

- b) Write the differences between machine learning and deep learning. 6 M

OR

9. a) Illustrate the various layers involved in the CNN in detail. 7 M
- b) What is Multilayer Perceptron (MLP)? 5 M

UNIT – V

10. a) Develop the pre-processing steps involved in the speech recognition. Explain with an example. 6 M
- b) Use deep learning model for decision making process for loan sanction application. 6 M

OR

11. a) Use deep learning model to explain one computer vision application. 6 M
- b) List out four real time applications of natural language processing. Discuss any one application by using Deep learning model. 6 M