

09/11

1907E576

Candidate's Seat No : _____

M.C.A. Sem.-3 (A.T.K.T.) Examination

Deep Learning

July-2024

Time : 3-00 Hours]

[Max. Marks : 50

Instructions:

- Write both the Sections in the separate answer book.
- Both Sections having equal weightage.
- Draw Diagrams wherever necessary.
- Make Assumptions wherever necessary.

SECTION – I

- Q-1 Answer the following:
- a. Why do we need an activation function in neural network? (2)
 - b. Explain the vanishing gradient problem. (3)
- Q-2 Attempt the following: (any two) (10)
- a. Explain ReLu activation function. Also, explain what is dying ReLu and how to solve it.
 - b. What is a Convolutional Neural Network? Explain with the help of a labelled architecture.
 - c. Explain sparse interconnections in detail using an example.
- Q-3 Attempt the following: (any two) (10)
- a. What do you mean by Optimization in neural network? Explain any two optimization techniques.
 - b. Explain RNN using a fully labelled architecture.
 - c. What is the purpose of regularization in model training? Explain any two regularization techniques.

(P.T.O)

SECTION – II

- Q-4 Answer the following: (3)
- a. Explain any three machine learning tasks. (2)
 - b. Brief the concept of generalization.
- Q-5 Attempt the following: (**any four**) (20)
- a. Explain how GRU helps to overcome the vanishing gradient problem through its labelled architecture.
 - b. What is max pooling? Explain how max pooling is invariant to translation.
 - c. Explain how LSTM stores long-term and short-term memories using its labelled architecture.
 - d. Explain sigmoid and tanh activation functions in detail.
 - e. What is model capacity? Why is it important?
 - f. What are the different challenges faced in the optimization while training deep models?

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SECTION – I

Q-1 Answer the following questions [5]

- (i) Which command is use to create a component in angular?
- (ii) In which year Angularjs was introduce?
- (iii) Mark True or False
 - a. Angular provide us reusable component
 - b. Angular is completely based on HTML and javascript
 - c. Javascript is an interpreted language

Q-2 Fill in the blank [4]

1. Angularjs was released by _____.
2. SPA stands for _____.
3. Angular CLI stands for _____.
4. _____ used for two way binding.

Q-3 Answer following [6]

1. Difference between library and framework.
2. What is SPA? Explain advantages and disadvantages.
3. Write down a short not on below Javascript concepts
 - i. Hoisting
 - ii. Async/await

Q-4 Explain Following Questions [Any two] [10]

1. Explain data-binding with example of each.
2. Explain available pipes or filter in Angular with examples.
3. Explain map , filter and reduce method of array with example.

(P.T.O)

SECTION – II

Q-5 Answer the following Questions [5]

1. In Nodejs , callbacks are often used to handle _____ operations.
2. Events in Nodejs are instance of EventEmitter Class [True / false].
3. What is console in nodejs.
4. Node package manager (NPM) is used for managing and installing javascript packages globally [True / False]
5. HTTP stands for _____.

Q-6 Give Answer in One-line [Any 3] [3]

1. What is TypeScript?
2. Give Example of Interpolation,
3. Write syntax to display <p> tag 4 times using ngFor.
4. Write code for navigate to "product/update" on button click.

Q-7 Attempt the following [Any 4] [12]

1. Explain Hoisting feature in JavaScript and describe how it behaves Differently with let, var and const.
2. Explain Async/Await with example.
3. Explain map, filter and reduce method of array with example.
4. List and explain built-in directives with example.
5. List and explain any three pipes with example.

Q-8 Answer the following questions. [5]

1. Explain the roles of the http and https modules in Node.js.
2. What are callbacks in Nodejs, and why are they important in an asynchronous environment?

OR

1. Explain commonly used console methods in Node.js for debugging and logging?
2. How to create and handle custom events in a Nodejs application using the events module?
