L1/56

0101E928

Candidate's Seat No :_____

MCA Sem.-3 Examination

Deep Learning

January-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 Explain the following terms with an appropriate example:

a. Why do we need an activation function in neural network? (2)

b. Brief the concept of generalization. (3)

Q-2 Attempt the following: (10)

a. What is a Convolutional Neural Network? Explain with the help of a labelled architecture.

b. Explain sparse interconnections in detail using an example.

OR

Q-2 Attempt the following:

a. Explain ReLu activation function. Also, explain what is dying ReLu and how to solve it. (10)

b. Explain equivariant and invariant properties of CNN.

Q-3 Attempt the following : (10)

a. What do you mean by Optimization in neural network? Explain any two optimization techniques.

b. Explain RNN using a fully labelled architecture.

OR

Q-3 Attempt the following: (10)

a. What is the purpose of regularization in model training? Explain any two regularization techniques.

b. What is cross entropy? Explain what is the relation between maximum likelihood and cross entropy.

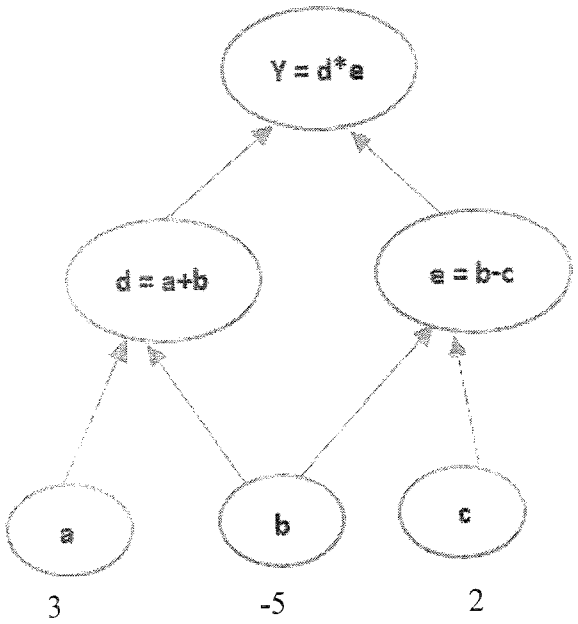
P.T.O

E928-2

SECTION – II

Q-4 Explain the following Terms with an appropriate example.

a. Implement backward propagation for the following computational graph. Find $\partial Y/\partial a$, $\partial Y/\partial b$, $\partial Y/\partial c$. **(3)**



b. Explain what is exploding gradient problem. **(2)**

Q-5 Attempt the following: **(10)**

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.

OR

Q-5 Attempt the following: **(10)**

a. What is model capacity? Why is it important?

b. Describe in brief the difference between GRU and LSTM. Which one is better out of the two and why?

Q-6 Attempt the following: **(10)**

a. Explain any five machine learning tasks.

b. Explain how LSTM stores long-term and short-term memories using architecture.

OR

Q-6 Attempt the following: **(10)**

a. Explain sigmoid and tanh activation functions in detail.

b. What are the different challenges faced in the optimization while training deep models?

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0101E928/3

Candidate's Seat No :_____

MCA Sem.-3 Examination

Full Stack Web Dev

January-2024

Time : 3-00 Hours] **[Max. Marks : 50**

Instructions:

(a) Write both the Section in separate answer book.
(b) Both Section having equal weightage.
(c) Draw Diagram wherever necessary.
(d) Make Assumption wherever necessary.

Section-I

Q-1. Mark True of False. [Any 5] (5)

1. Angular provides reusable components.
2. Angular is completely based on HTML and JavaScript.
3. {{var a = 5}} This Expression is correct in Angular.
4. {{5 + 5 / 2}} This Expression is correct in Angular.
5. Variables in JavaScript are strongly typed.
6. JavaScript is not an interpreted language.

Q-2. Fill in the Blank. [Any 4] (4)

1. AngularJs was released in year _____.
2. AngularJs was released in by _____.
3. SPA Stands for _____.
4. Angular CLI Stands for _____.
5. _____ used for two-way binding.

Q-3. Answer Following. (6)

1. Difference Between library and Framework.
2. What is SPA? Explain with advantages and disadvantages.

Q-4. Explain Following questions. [Any two] (10)

1. Explain Component Lifecyle with its methods.
2. Explain data-binding with example of each.
3. Explain pipes or filter in angular with example.

P.T.O

F928-4

Section-II

Q-5. 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-6. 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-7. Answer the following questions. (5)

1. In Node.js, callbacks are often used to handle _____ operations.
2. Events in Node.js are instances of the 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-8. Answer the following questions. (5)

1. Explain the roles of the http and https modules in Node.js.
2. What are callbacks in Node.js, 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 Node.js application using the events module?