

B.E VII<sup>th</sup> sem CSE (AIML) R-19 CScheme

Q.P. Code: 10065146

(11)

Duration: 3 Hours

[Max Marks: 80]

- (1) Question No 1 is Compulsory.
- (2) Attempt any three questions out of the remaining five.
- (3) All questions carry equal marks.
- (4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **four** [20]
  - a) Comment on the Representation Power of MLPs.
  - b) Explain Gradient Descent in Deep Learning.
  - c) Explain the dropout method and it's advantages.
  - d) What are Denoising Autoencoders?
  - e) Explain Pooling operation in CNN.
- 2 a) What are the Three Classes of Deep Learning , explain each? [10]
  - b) Explain and analyze the architectural of AlexNet Convolution Neural Network. [10]
- 3 a) What are the different types of Gradient Descent methods, explain any three of them. [10]
  - b) Differentiate between the architecture of LSTM and GRU network. [10]
- 4 a) Explain the key components of an RNN. [10]
  - b) Consider a CNN layer with the following configuration: [10]
    - The input to the layer has 32 channels and a spatial size of 64x64.
    - The convolutional layer has 64 filters (kernels), each of size 3x3, with a stride of 1 and no padding.
    - Each filter is applied to every channel of the input.

Calculate the total number of parameters (weights) in this convolutional layer.
- 5 a) Comment on the significance of Loss functions and explain different types of Loss functions while training a network. [10]
  - b) Explain any three types of Autoencoders. [10]
- 6 a) What is the significance of Activation Functions in Neural Networks, explain different types Activation functions used in NN. [10]
  - b) Explain Generative Adversarial Networks Architecture and its applications. [10]

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## BE sem VII CSE (AIML) R-19 C scheme

Time: 3 Hours

Total Marks: 80

- Note: 1. Question 1 is compulsory  
 2. Answer any three out of the remaining five questions.  
 3. Assume any suitable data wherever required and justify the same.

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|---------|--|----|
| Q.1 (a) | Explain 5 V's of big data.   | 05 |
| (b)     | Differentiate between SQL vs NoSQL   | 05 |
| (c)     | Write the limitations of Hadoop.   | 05 |
| (d)     | Explain how failures are handled in Map Reduce job                               | 05 |
| Q.2 (a) | Illustrate relational algebra operations with example.                           | 10 |
| (b)     | Explain big data enabling technologies.  | 10 |
| Q.3 (a) | Explain PCY algorithm and its types with neat labeled diagram                    | 10 |
| (b)     | Compare different types of NoSQL architectural pattern                           | 10 |
| Q.4 (a) | Explain Hadoop Architectural Model with both components in detail                | 10 |
| (b)     | Write the functions of the components and execution steps in Map Reduce          | 10 |
| Q.5 (a) | Write issues in data stream queries. Explain the issues in data streaming        | 10 |
| (b)     | Explain Page rank using Map reduce, also explain spider traps and dead ends      | 10 |
| Q.6 (a) | Explain CURE algorithm with its advantages over traditional clustering algorithm | 10 |
| (b)     | Explain Movie recommendation using Collaborative -based filtering.               | 10 |



BE VII<sup>th</sup> Sem

R-19 scheme CS&amp;CA(ML)

Q.P. code: 10055703

Duration: 3 hours

Max. Marks: 80

- N.B.: 1) Question No.1 is compulsory.  
 2) Attempt any THREE questions out of remaining FIVE questions.  
 3) Figures to the right indicates full marks.  
 4) Assume suitable data if necessary.

- Q1 20
- What is Cybercrime? Who are Cybercriminals? Explain.
  - How Cybercrimes differs from most terrestrial crimes?
  - What are different Security Risks for Organizations?
  - Outline the challenges for securing data in business perspective.
- Q.2 10
- What are illegal activities observed in Cyber Cafe? What are safety and security measures while using the computer in Cyber Cafe?
  - What is digital evidence? Where one can find it. 10
- Q.3 10
- Explain different types of Cybercrimes. 10
  - What are basic security precautions to be taken to safeguard Laptops and Wireless devices? Explain. 10
- Q.4 10
- Explain Steps for SQL Injection attack. How to prevent SQL Injection attacks? 10
  - Discuss steps involved in planning of cyberattacks by criminal. 10
- Q.5 10
- What is vishing attack? How it works? How to protect from vishing attack? 10
  - What is e-commerce? Discuss types of e-commerce. 10
- Q.6 Write short notes on any FOUR 20
- Cyberstalking and harassment
  - HIPAA
  - Buffer overflow attack
  - Botnets
  - DOS attack
  - Mobile/Cell Phone attacks



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QP-10043875

14/12/24

[3 Hours]

[Total Marks: 80]

- Note : 1. Question 1 is compulsory  
2. Answer any three out of remaining questions  
3. Assume suitable data where required

- Q1 Solve any 4
- a) Explain the Core Elements of User Experience 5
  - b) What are the different Types of Usability Testing 5
  - c) Demonstrate the benefits of virtual reality 5
  - d) Define the Interface to the Virtual World-Input & output- Visual, Aural and Haptic Displays 5
  - e) Explain the working of UX elements 5
- Q2
- a) Why is Usability testing so important? And When should you conduct UX testing? 10
  - b) Discuss the various key Elements of Virtual Reality Experience 10
- Q3
- a) Why, then, are so many digital products so difficult and unpleasant to use? 10
  - b) What is Aural Representation and Haptic Representation in VR 10
- Q4
- a) Explain the Information Design and Data Visualization 10
  - b) Why do UI/UX designers use Wireframes? What are the different types of wireframes? 10
- Q5
- a) Discuss in detail, why Understanding the Business Requirements/Goals is important. 10
  - b) Consider an E-ticket Booking Platform. Users often encounter challenges when booking e-tickets for events. Describe a usability testing plan for an e-ticket booking platform, focusing on improving the user experience during the ticket purchase process. 10
- Q6 Write a short note on 20
- a) prototyping tools and their types.
  - b) mental models
  - c) Explain 5 visual design principles that impact UX
  - d) Applications of Virtual Reality

