QPcode: 10080908

BE Sem VII (RSECAIML) R-19 eScheme

Time: 03 Hours

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.

Q.1	(a)	Compare traditional data and big data.	05
	(b)	What are the advantages and limitations of Hadoop	05
	(c)	Differentiate between SQL vs NoSQL	05
	(d)	List and explain Distance measures for Big Data	05
Q.2	(a)	Draw Hadoop Ecosystem and briefly explain its components	10
	(b)	Write the functions of the components and execution steps in Map Reduce	10
Q.3	(a)	Explain Selection and Projection algebraic operation using MapReduce.	10
	(b)	Explain Key-value store and Document Store NoSQL architectural pattern with example.	10
Q.4	(a)	Draw a neat sketch, explain the architecture of the data-stream management system	10
	(b)	Explain DGIM algorithm for counting ones in a stream with example	10
Q.5	(a)	Explain Page rank using Map reduce, also explain spider traps and dead ends	10
	(b)	Explain Movie recommendation using Content -based filtering.	10
Q.6		**Write short notes on any two (any 2)**	20
	(a)	Bloom Filter with analysis	
	(b)	Cure Algorithm	
	(c)	Clustering of Social-Network Graphs.	
	(d)	Four ways that NoSQL systems handle big data problems.	

****

QP code) 10055704

BE Sem VII th CSE(AIML) R-19 C scheme

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	**Attempt any FOUR of the following**	**20**
a	What are Mobile Vulnerabilities?	
b	What are different Security Risks for Organizations?	
c	Difference between virus and worm.	
d	How cybercrimes differ from most terrestrial crimes?	
e	Explain the objectives of IT Act 2000.	
Q.2		
a	What is WIPO? List treaties prepared by WIPO.	**10**
b	Explain about the impact of Cybercrimes in Social Engineering.	**10**
Q.3		
a	Explain steps for SQL Injection attack. How to prevent SQL Injection attacks?	**10**
b	Explain E-contracts and its different types.	**10**
Q.4		
a	What is Cybercrime? Who are Cybercriminals? Explain	**10**
b	What is e-commerce? Discuss types of e-commerce.	**10**
Q.5		
a	What are basic security precautions to be taken to safeguard Laptops and Wireless devices? Explain.	**10**
b	What are illegal activities observed in Cyber Cafe? What are safety and security measures while using the computer in Cyber Cafe?	**10**
Q.6	**Write short notes on any FOUR**	**20**
a	Digital evidence	
b	HIPAA	
c	Buffer overflow attack	
d	Planning of cyberattacks by criminal.	
e	Vishing attack	
f	Trojan horse and backdoor	

QP code: 10086321

BE Sem VII CSE(AIML) R-19 C Scheme

[3 hrs] [80 Marks]

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)	Give the importance of feedback in improving user experience.	5
b)	What are the different Types of Usability Testing	5
c)	Explain the Promising Fields of virtual reality	5
d)	Discuss 5 visual design principles that impact UX	5
e)	Explain the Core Elements of User Experience	5
Q2		
a)	Explain how vision and sound can be used to enhance the virtual reality experience?	10
b)	Discuss the various key Elements of Virtual Reality Experience	10
Q3		
a)	Consider a Voice Assistant Integration: When integrating a voice assistant (e.g., Siri, Alexa) into a product or service, how would you conduct usability testing to ensure that users can interact with the voice assistant seamlessly and effectively?	10
b)	Why is Usability testing so important? And When should you conduct UX testing?	10
Q4		
a)	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
b)	What makes an application a good candidate for VR?	10
Q5		
a)	Explain user monitoring and world monitoring techniques?	10
b)	Construct testing scenarios for ordering food with Zomato to conduct usability testing.	10
Q6	Write a short note on any 2	20
a)	Mental models	
b)	Explain different Forms and Genres of VR 5	
c)	The Information Design and Data Visualization	

QP code: 10083981

BE Sem VII CSE (AI ML) R-19 C scheme

Time: (3 Hours) **Total Marks:80**

N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions out of the remaining five.

Q.1		Answer the following **(Any four)**	
	a.	Explain the need of AI in the healthcare sector?	**05**
	b.	Explain what you understand by Electronic Health Record (EHR) and its benefits?	**05**
	c.	Explain ethics of Intelligence in healthcare?	**05**
	d.	Explain the need of NLP in healthcare?	**05**
	e.	Explain semantic role labelling in NLP?	**05**
	f.	Explain Unified Medical Language System (UMLS) clinical tool?	**05**
Q.2	a.	Explain Ensemble Learning and its types?	**10**
	b.	Explain the following: a. Maximum Entropy Model b. Hidden Markov Model	**10**
Q.3	a.	Explain evolutionary algorithm in detail?	**10**
	b.	Explain any two hyper parameter tuning algorithms?	**10**
Q.4	a.	Explain various evaluation metrics used in healthcare?	**10**
	b.	Explain low level NLP components?	**10**
Q.5	a.	Explain working of Intelligent Personal health record (iPHR) for continuous user monitoring?	**10**
	b.	Explain dimension reduction algorithm in detail?	**10**
Q.6		Write Short note on **(any 2)**	
	a.	Evidence Based Medicine	**10**
	b	Smart Hospitals	**10**
	c	Personalized Medicines	**10**
	d.	Robot assisted surgery	**10**

QP code : 10082863

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

Duration: 3hrs **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) Explain basic architecture of feedforward neural network.
b) Explain regularization in neural network.
c) Explain types of neural network.
d) Explain the concept of overfitting and under fitting in neural network.
e) Explain basic working of CNN.

2 a) Explain the gradient descent algorithm used in neural network. Also discuss types of gradient descent in detail. [10]
b) Explain the working of auto encoders. Also discuss type of auto encoders in detail. [10]

3 a) Draw and explain any two modern deep learning architectures. [10]
b) Differentiate between the LSTM and GRU network. [10]

4 a) Explain the working of RNN with the help of suitable diagram. [10]
b) Explain how Recurrent Neural Networks (RNNs) are suited for sequential data. Compare the standard RNN architecture with Long Short-Term Memory (LSTM) networks in terms of their ability to handle long-term dependencies. Provide a real-world application where using an LSTM would be significantly more beneficial than a simple RNN and justify your reasoning. [10]

5 a) Discuss the role of a loss function in training a neural network. Compare Mean Squared Error (MSE) and Cross-Entropy Loss in terms of their usage, characteristics, and impact on model performance. In which scenarios would using Cross-Entropy Loss be more appropriate than MSE? Justify your answer with a suitable example. [10]
b) Explain architecture of GAN in detail. Also comment on applications of GAN. [10]

6 a) What is the significance of Activation Functions in Neural Networks, explain different types Activation functions used in NN. [10]
b) Explain the learning process in a neural network. How does a neural network update its weights during training? Describe the role of forward propagation, loss calculation, backpropagation, and optimization in this learning process. [10]

****