RA2231242030004

SRM Institute of Science and Technology

Department of Computer Application

Delhi – Meerut Road, Sikri Kalan, Ghaziabad, Uttar Pradesh – 201204

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
DELHI-NCR CAMPUS, GHAZIABAD (U.P.)

Academic Year: 2023-24 (ODD) **SET – A**

Test	**: Internal Examination III**	**Date & Session: 16/10/23 & FN**
Course Code & Title	**: UDS21301J/Introduction to Deep Learning**	**Duration: 3 Hours**
Year & Sem	**: 2nd /3rd**	**Max. Marks: 100**

Part - A

Answer all questions **(10Q x 2M = 20 Marks)**

Q. No	Question	Marks	BL	CO	PO
1	What is the activation functions in deep learning? Explain.	2	2	2	3
2	Define Artificial Intelligence (AI) in the context of computing.	2	2	2	2
3	Explain the role of Machine Learning (ML) in making predictions from data.	2	1	2	3
4	In Data Science (DS), what is the significance of exploratory data analysis?	2	2	2	2
5	Differentiate between regression and classification tasks in machine learning.	2	1	2	2
6	Define unsupervised learning and provide an example application.	2	1	2	1
7	Name a key hardware component commonly used in deep learning systems.	2	2	2	3
8	Explain the role of user interface in facilitating collaboration in deep learning projects.	2	2	2	2
9	Provide an example of a real-world application where deep learning excels.	2	2	1	3
10	How does deep learning contribute to advancements in natural language processing?				

Part B

Answer all questions **5Q x 16M = 80 Marks**

Q. No	Question	Marks	BL	CO	PO
11.	(A) Explain the fundamental workflow of a deep learning system, highlighting the key stages such as data preprocessing, model architecture design, training process, and inference. Discuss the role of each stage in achieving successful deep learning outcomes.	16	2	2	3
	(OR)				
	(B) Compare the architectural considerations for designing deep neural networks for regression and classification problems. Examine how the choice of activation functions, output layers, and loss functions differs between the two tasks. Discuss the challenges and strategies in adapting neural network architectures for optimal performance in regression and classification scenarios, considering factors such as data types and model interpretability.	16	1	2	3
12.	(A) Contrast Artificial Neural Networks (ANN) and Bayesian Neural Networks (BNN) in the realm of deep learning. Elaborate on the core principles, training methodologies, and advantages/disadvantages of each, illustrating how they address uncertainty and contribute to improved model performance.	16	2	3	2

	(OR)				
	(B) Compare and contrast the impact of linear transformations on the performance and expressiveness of deep neural networks. Discuss the advantages and limitations of incorporating linear transformations into different layers of a neural network. Include examples to illustrate how these transformations contribute to the overall functionality and learning capacity of deep learning models.	16	1	2	
13.	(A) Explore the evolution of Artificial Intelligence, Deep Learning, Machine Learning, and Data Science over time. Trace the historical developments, key breakthroughs, and notable applications in each domain. Additionally, discuss the current trends and future prospects for these interconnected but distinct areas of study.	16	2	3	3
	(OR)				
	(B) Compare and contrast supervised and unsupervised learning models in deep learning. Discuss the key characteristics, objectives, and applications of each paradigm. Highlight the role of labeled data in supervised learning and the challenges and advantages associated with training models without labeled data in unsupervised learning. Provide examples to illustrate scenarios where each approach excels.	16	2	2	2
14.	(A) Discuss the critical role of data in the success of deep learning models. Cover aspects such as data collection, preprocessing, and augmentation, highlighting their impact on model performance. Explore challenges associated with data quality, quantity, and imbalance, and propose strategies to address these challenges. Provide real-world examples to illustrate how the quality and quantity of data influence the training and generalization capabilities of deep learning models.	16	1	2	2
	(OR)				
	(B) Evaluate the importance of data versioning and management in deep learning projects. Discuss the challenges associated with handling large-scale datasets, version control, and data reproducibility. Explore strategies for efficient data storage, retrieval, and preprocessing to ensure the reproducibility and scalability of deep learning experiments. Illustrate your points with examples from real-world data engineering practices in deep learning.	16	2	2	3
15.	(A) Explore the significance of data visualization in the context of deep learning. Discuss the role of visualizations in understanding complex datasets, feature exploration, and model performance evaluation. Highlight different types of visualizations, such as histograms, heatmaps, and t-SNE plots, and explain how they aid in interpreting and communicating insights from deep learning experiments. Provide examples of scenarios where data visualization played a crucial role in model development and analysis.	16	2	3	2
	(OR)				
	(B) Discuss the importance of user interface design in the development and deployment of deep learning applications. Explore the key considerations in designing intuitive and user-friendly interfaces for both developers and end-users. Highlight the role of visualization, interactivity, and feedback mechanisms in enhancing the user experience in deep learning systems. Provide examples of successful user interfaces in the context of model training, evaluation, and deployment.	16	2	2	2

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Academic Year: 2022-23 (ODD) SET – B

R	A	2	2	3	1	2	4	2	0	3	0	0	0	4

Test : Internal Model Examination III **Date & Session : 17/10/2023 & FN**

Course Code & Title: UDS21302J / ADVANCED COMPUTING WITH PYTHON AND GCP
Duration: 3 Hours

Year & Sem : II Year / III Sem **Max. Marks: 100**

Part - A

Answer all questions **(10Q x 2M = 20 Marks)**

Q. No	Question	Marks	BL	CO	PO
1	Differentiate between docker and Kubernetes.	2	L1	3	2
2	Write a program in python to area of circle.	2	L1	1	1
3	Illustrate the routers.	2	L2	4	5
4	Write a program in python to quadratic equation.	2	L2	3	7
5	Create the and manage IAM roles on google cloud.	2	L3	6	4
6	Give the examples of In-memory computing.	2	L1	3	2
7	Define containers.	2	L1	3	2
8	What is google compute engine?	2	L3	6	4
9	List out the advantages and disadvantages of the MPI.	2	L1	1	1
10	How AI service works?	2	L1	1	1

Part B

Answer all questions **5Q x 16M = 80 Marks**

11.	**(A)** Can you explain how OpenMP uses multi-threading to enhance program execution speed.	16	L3	3	10
	(OR)				
	(B) Explain the concept of MPI Datatypes and why it is important.	16	L2	5	9

12.	(A) Analyze clinical data using BigQuery and AI platform Notebooks.	16	L2	3	
	(OR)				
	(B) Evaluate HPC building blocks.	16	L3	4	11
13.	(A) Elaborate Parallel Meshing.	16	L3	4	10
	(OR)				
	(B) Explain mesh topology.	16	L2	5	9
14.	(A) Explain building blocks in cluster computing.	16	L2	5	8
	(OR)				
	(B) Analyze production performance with cloud profiler.	16	L2	3	9
15.	(A) Create our first VPC in google cloud.	16	L3	4	7
	(OR)				
	(B) Describe Grid computing systems and distributed systems.	16	L3	3	10

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Academic Year: 2023-24 (ODD) **SET – B**

Test : Internal Examination III **Date & Session :18.10.2023 FN**

Course Code & Title : UDS21303J Introduction to Natural Language Processing

Duration :3 Hours

Year &Sem : II Year – III Sem **Max. Marks: 100**

Part – A *Answer all questions* **(10Q * 2 = 20 Marks)**

Q. No	Question	Marks	BL	CO	PO
1	Define Stemming.	2	2	5	3
2	Discuss text preprocessing.	2	2	4	2
3	Define Lemmatization	2	4	6	1
4	*Differentiate* stop word removal and spell checking	2	4	5	3
5	Define text summarization	2	2	4	2
6	State the advantages of data modeling	2	5	4	2
7	How will you validate data for model generation	2	3	2	3
8	Differentiate model analysis and model outcome	2	4	4	4
9	Explain model pipeline techniques	2	3	2	5
10	Identify the components of model optimization	2	3	4	5

Part B

	Answer all questions	5Q x 16M = 80 Marks			
11.	(A) Identify the components of natural language processing	16	4	5	4
	(OR)				
	(B) Describe the different phases involved in natural language processing for an online library.	16	2	4	5
12.	(A) Compare and contrast different text representation and feature engineering techniques	16	4	1	1
	(OR)				
	(B) Identify the features of good NLP framework and define the same with its advantages and disadvantages	16	1	4	6
13	(A) Describe text summarization with its steps in detail.	16	4	1	1
	OR				

	(B) Explain topic modeling and keyword extraction with examples.	16	2	1	
14	Discuss the training and validation process of data in natural language processing	16	4	3	3
	OR				
	(B) Describe model selection, model analysis and model outcome with examples	16	2	1	4
15	(A) Differentiate text classification methodologies.	16	3	2	3
	OR				
	(B) Explain the different process data generation and data collection	16	3	5	4

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Academic Year: 2023-24 (ODD) **SET – A**

Test : Internal Examination III
Course Code & Title : UDS21S03J ,Data Engineering for Enterprise
Year & Sem : II/ III

Date & Session : 19/10/2023(FN)
Duration:3 Hour
Max. Marks: 100

Part - A

Answer all questions (10Q x 2M = 20 Marks)

Q. No	Question	Marks	BL	CO	PO
1:	Define the term Big data with its various types.	2	1	1	1
2:	Explain 6V's of Big Data.	2	1	1	1
3	How Big Data and IOT are related to each other ?	2	2	2	3
4	Explain JSON file structure& Compare it with XML.	2	2	3	3
5	Describe data dictionary with its key elements.	2	1	3	3
6	Describe DAG and RDD.	2	1	3	3
7	Explain the reason why redshift is 10 times faster.	2	1	3	3
8	Compare row oriented and column oriented data base.	2	2	1	3
9	Define the term data staging.	2	1	3	4
10	Compare Hadoop 1.X and Hadoop 2.X architecture.	2	2	1	1

Part B

	Answer all questions	**5Q x 16M = 80 Marks**			
11.	(A) Discuss About Hadoop? Explain the various component of Hadoop architecture in detail.	16	1	1	3
	(OR)				
	(B)Describe the term IoT.and explain the 4 stage architecture of IoT system with its advantages and disadvantages.	16	2	2	3
12.	(A) Differentiate among Data warehouse, Data Mart and Data lake in detail.	16	2	3	3
	(OR)				
	(B) Differntiate between data Engineering and data science. and also explain the process of data engineering.	16	2	3	2
13	Describe about data warehouse & explain its architecture with diagram and characteristics..	16	1	3	3
	(OR)				
	(B)Discuss the term Data Mapping. when it is necessary? also explain the Various data mapping techniques in detail.	16	1	3	4

14	(A) What do you understand by RDBMS? Explain its ACID properties and also compare Oracle with MySQLServer.	16	2	3	
	(OR)				
	(B) Explain the architecture of Apache Spark with its component. and also compare Apache Spark with apache Storm.	16	2	1	5
15	(A) Discuss about data pipeline with its components and working & also compare ETL and ELT.	16	2	5	4
	(OR)				
	(B) Discuss about Amazon Redshift with its architecture. Also explain various features of redshift.	16	1	1	3

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Academic Year: 2022-23 SET – A

Test : Internal Examination III	**Date & Session : 20/10/2023 & MN**
Course Code & Title : UJK20301T / Universal Human Values	**Duration: 2 Hours**
Year & Sem : II Year & III Sem	**Max. Marks: 100**

Part - A

Answer all questions **(10Q x 2M = 20 Marks)**

Q. No	Question	Marks	BL	CO	PO
1	"Honesty has a power that very few people can handle", justify this statement.	2	2	4	1
2	How would you distinguish sincerity from veracity?	2	2	3	3
3	Do you think it's important to be compassionate towards others?	2	1	1	1
4	How priority creates impediments on the path of righteousness?	2	3	4	1
5	Differentiate between empathy and sympathy.	2	2	3	1
6	Define the concept of internal and external peace.	2	2	4	1
7	Is world peace possible? Explain your views.	2	2	2	1
8	Why are relationship considered important for human beings?	2	2	1	1
9	Enumerate Gandhi's philosophy of non-violence?	2	1	4	1
10	How would you distinguish between respect and gratitude?	2	2	3	3

Part B

	Answer all questions	**5Q x 16M = 80 Marks**			
11.	(A) Define the concept of value education? Do you think there is a need of value education?	16	2	1	2
	(OR)				
	(B) When there is freedom, equality, and justice, peace can be best achieved. Do you agree?	16	2	4	1
12.	(A) Do you agree with Martin Luther King's statement, "Non-violence is not slavery- like inaction but a powerful moral force that helps in social change."	16	2	4	2
	(OR)				
	(B) What is righteousness and why is it necessary in our life? Validate your arguments by outlining the traits of a well- known person.	16	2	3	3
13.	(A) Describe some traits of righteousness by illuminating notable individuals from history and literature.	16	2	1	2
	(OR)				
	(B) Define the concept of "war" and "peace", and its impact on individual, society, and country.	16	2	4	3

14.	(A) Do charismatic leaders like Gandhi or Martin Luther King, Jr are necessary for nonviolent movements? Give instances to illustrate it.	16	3	3	1
	(OR)				
	(B) Enumerate some of the important values which lie at the base of good relationship.	16	2	1	2
15.	**Did you know?**  This photo was taken by Kevin Carter. He won Pulitzer Prize for this picture of a vulture waiting for a starving girl to die. The photographer committed suicide out of depression after taking this picture. **Ideas for Discussion** 1. Discuss the caption. 2. Can we end world hunger? 3. The gap between developed & under-developed nations 4. Can depression kill somebody?	16	2	5	2
	(OR)				
	(B) Hritika is a good-looking, intelligent girl from a corner of India. She went to Kota for the preparation for IIT-JEE. While preparing for IIT-JEE, Hritika met Vishal at a family function. He was an IITian working in a huge MNC, and was intelligent, young, good-looking and well-established. He was in a position where she could always see herself. They began conversing with one another. Gradually, Hritika fell in love with Vishal as he helped in her studies. Also, their perceptions of the world matched to a greater extent. They talked a lot and discussed everything with each other. Hritika thought that she had met the love of her life. He was perfect in every sense in her eyes. The initial six months went smooth. Hritika's preparations were over, and she also got an IIT. They were happy together. Soon she started noticing some behavioural changes in Vishal. She got irritated by his behaviour. He was no longer the perfect guy. She found out she was the only one doing everything to keep their relationship intact. 1. As Hritika's faithful friend, what lifestyle/measures/actions will you suggest to Hritika? 2. Why did Hritika find Vishal attractive at the first place? 3. Should Hritika embrace people with flaws or get rid of such situation? 4. Was it one-sided from the beginning? Who's wrong here- Vishal or Hritika ?	16	2	5	2