SRM Institute of Science and Technology
Department of Computer Application
Delhi – Meerut Road, Sikri Kalan, Ghaziabad, Uttar Pradesh – 201204

SRM
DELHI-NCR CAMPUS, GHAZIABAD (U.P.)

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

Test : **Internal Examination III**	**Date & Session : 03/04/2024 & AN**
Course Code & Title : **UDS21401J & Deep Learning for Enterprise**	**Duration: 3 Hours**
Year & Sem : **II Year / IV Sem**	**Max. Marks: 100 Marks**

Part - A

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

Q. No	Question	Marks	BL	CO	PO
1	Explain the supervised learning.	2	2	1	5
2	Write a note on classic neural networks.	2	1	1	2
3	Explain the overfitting issue in neural networks.	2	2	2	4
4	Write a note on weight and bias.	2	1	2	3
5	Discuss cost function with example.	2	3	3	2
6	Illustrate the advantages of feature visualization.	2	4	3	2
7	Describe the working principle of LSTM networks.	2	3	4	3
8	Explain the applications of recurrent neural networks.	2	3	4	2
9	Illustrate the adagrad gradient descent algorithm.	2	2	5	5
10	Write a note on data engineering and data pipeline.	2	4	5	1

Part - B

	Answer all questions	**(5Q x 16M = 80 Marks)**			
11.	(A) Explain the difference between RNN and CNN with examples.	16	4	1	3
	(OR)				
	(B) Describe the self-organizing maps with examples.	16	2	1	5
12.	(A) Explain the applications of deep learning in healthcare, retail, energy, and oil & gas.	16	3	2	2
	(OR)				
	(B) Explain the operation of deep learning feed-forward neural networks.	16	3	2	3
13.	(A) Explain the difference between neural network and deep neural network.	16	4	3	3
	(OR)				
	(B) Illustrate the network dissection algorithm with a simple example.	16	3	3	4
14.	(A) Explain the optimization techniques used in deep learning with their advantages and disadvantages, with examples.	16	2	4	5

	(OR)				
	(B) Describe the working principle of autoencoders and decoders with their applications in deep learning.	16	3	4	4
15.	(A) Explain the concept of regularization in deep neural network training, and discuss how early stopping, dropout, and batch normalization can be used to improve the performance of a deep neural network.	16	2	5	5
	(OR)				
	(B) Explain different types of back propagation networks.	16	4	5	3

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

Test : Internal Examination III	**Date & Session : 4/04/24 AN**
Course Code & Title : UDS21402J Introduction to Computer Vision	**Duration:3 Hours**
Year &Sem : II Year IV	**Max. Marks: 100 Marks**

Part - A

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

Q. No	Question	Marks	BL	CO	PO
1	Define medical imaging.	2	1	1	1
2	Computer vision defined from Industry perspective.	2	2	1	2
3	Write the importance of surveillance.	2	1	2	2
4	Write computer vision techniques.	2	1	2	2
5	Define the concept of multiprocessing.	2	2	3	1
6	Compare image classificationand text classification.	2	2	3	3
7	Write the advantages of median filter.	2	1	3	1
8	Define the concept of image processing.	2	1	4	1
9	What do you understand by data structure?	2	1	5	1
10	Differentiate between data format and data type.	2	2	5	2

Part B

	Answer all questions	5Q x 16M = 80 Marks			
11.	(A) Explain the following popular computer vision frameworks in detail (i) OpenCV(ii) Tensor Flow (iii) Matlab (iv) CUDA	16	2	3	4
	(OR)				
	(B) Distinguish the following linear filter, non linear filter, box filter, gaussian Filter with suitable example .	16	3	3	4
12.	(A) Describe the concept of "CNN" and "Fast R-CNN" in details	16	2	4	5
	(OR)				
	(B))Explain the concept ofdata visualization and model analysis	16	2	5	3
13.	(A) Describe the concept of image net, "CIFAR"and "MNIST" with example .	16	2	4	4
	(OR)				
	(B) Distinguish video data processing and computer vision in retail in details	16	2	1	5

14.	(A) Explain thereason for choosingthe hardwarecomponents (GPU, TPU) and Problem statement.	16	3	5	5
	(OR)				
	(B) Illustrate the following image processing techniques and business problem Identification with suitable example.	16	2	3	3
15.	(A) Describe the use and application of computer vision in automobile and energy System.	16	2	2	2
	(OR)				
	(B) Explain the following virtual reality and augmented reality and data ingestion.	16	2	1	2

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

Test : Internal Examination III	**Date & Session : 5/04/24 (AN)**
Course Code & Title : UDS21403J Working with Big data	**Duration:3 Hours**
Year &Sem : 2nd Year 4th Sem	**Max. Marks: 100 Marks**

Part - A

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

Q. No	Question	Marks	BL	CO	PO
1	Explain the characteristics of big data.	2	1	1	1,3
2	Write down the code for reading and displaying an image.	2	2	1	2,4,6
3	List & explain the main component of hadoop 2.0 architecture .	2	1	2	1,3
4	Discuss about in memory analytics & its importance.	2	1	2	1,3
5	Differentiate between apache spark & apache storm.	2	2	3	1,3
6	Compare rdds from data frames.	2	2	3	3,5
7	Describe ksqlDB.	2	1	4	3
8	Explain the use of orderBy () with example on dataframe.	2	2	4	2,4,6
9	List the types of NoSQL database.	2	1	5	3,5
10	Elaborate the term zigbee .	2	1	5	3

Part B

	Answer all questions	**5Q x 16M = 80 Marks**			
11.	(A) Compare apache spark with apache storm & also explain the architecture of apache storm with its advantages & disadvantages	16	2	1	3,5
	(OR)				
	(B) Describe the term big data analytics with it working and also list out the benefits ,challenges of big data analytics with its use cases.	16	1	1	1,3
12.	(A) Explain the architecture of apache spark & also explain the various component that are present in apache spark.	16	1	2	3,5
	(OR)				
	(B) Define data streaming with its various types. Explain the characteristics and application of data streaming. Also explain its advantages and disadvantages.	16	1	2	3,5
13.	(A) Describe apache pyspark with its architecture , benefits & challenges and also explain the various types of operation that can be performed on rdd..	16	2	3	2,4,6
	(OR)				
	(B) Explain hadoop ecosystem with its layered architecture & also compare HDFS with Hbase with respect to features.	16	1	3	1,3,5
14.	(A) Discuss about spark data frame with various ways for creation of data frame and explain the use of groupBy() function on it.	16	2	4	2,4,6
	(OR)				

	(B) Describe apache kafka with its various component & also explain its features & benefits.	16	1	4	3,5
15.	(A) Explain the different paradigm used for communication in computer networking and also explain AMQP protocol for communication in detail.	16	1	5	3,5
	(OR)				
	(B) Discuss about NOSQL databases with its types ,advantages and disadvantages and also compare it with RDBMS.	16	1	5	3,5,10

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

Test : Internal Examination III	**Date & Session : 06/04/24 & AN**
Course Code & Title : UDS21404J & Data Science for Enterprise	**Duration: 3 Hours**
Year & Sem : II & IV	**Max. Marks: 100 Marks**

Part - A

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

Q. No	Question	Marks	BL	CO	PO
1	Solve the channel capacity of a tv satellite having bandwidth 3000 Mbps.	2	3	1	3
2	Define the concept of streaming algorithm.	2	1	1	1
3	Define the primary goal of dimensionality reduction techniques like PCA and LDA?	2	1	2	2
4	Name one advantage of using isomap over PCA for dimensionality reduction.	2	3	2	1
5	Briefly explain the types of questions involved in Spin Selling and their objectives.	2	2	3	2
6	Define the role of linear optimization in supply chain management?	2	1	3	1
7	Describe the concept of text analytics processing.	2	2	4	2
8	Define the overview of apache airflow in data science.	2	1	4	1
9	Explain stemming and lemmatization in data science.	2	1	5	1
10	Define the concept of regular expression.	2	1	5	2

Part B

Answer all questions 5Q x 16M = 80 Marks

11.	(A) Describe the process of data science and also explain the concept of high dimensional regression and variable selection.	16	2	1	2
	(OR)				
	(B) Elaborate the concept of compression and error detection in data science. Write the techniques of error detection. Compare lossy and lossless compression.	16	3	1	3
12.	(A) Explain the concept of isomap in dimensionality reduction. How does isomap differ from PCA and LDA? Provide the benefits and challenges of isomap. Give real-world examples where isomap could be beneficial.	16	1	2	3
	(OR)				
	(B) Explore the concept of advanced regression techniques in predictive modeling. Compare and contrast various advanced regression techniques. Discuss and provide examples to illustrate their application.	16	3	2	2
13.	(A) Describe machine learning model analysis overview. Also write the importance and business benefits & challenges of machine learning model analysis. How to perform machine learning model analysis.	16	1	3	2
	(OR)				

	(B) Evaluate the structured framework of 5W and 5Why's in the context of business problem-solving and decision-making. Illustrate its effectiveness with real-world examples and challenges in its implementation.	16	3	3	2
14.	(A) Describe apache sqoop and apache flume overview. Why do we need apache sqoop and apache flume? Also explain it's architecture. Explain how to transfer data using sqoop. List out their business benefits and challenges.	16	1	4	3
	(OR)				
	(B) Explain the overview of amazon web services and amazon redshift. Also explain the concept of amazon management console.	16	1	4	3
15.	(A) Describe the overview of text based predictive modelling and write down the steps in text based predictive modelling.	16	2	5	2
	(OR)				
	(B) Contrast the concept of time series analysis overview. Also list out its business benefits and challenges. What are the components of time series and when to use time series analysis.	16	3	5	3