Code: 21F00202

MCA II Semester Regular & Supplementary Examinations July 2024

DATA SCIENCE WITH PYTHON

(Master of Computer Applications)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	Discuss about measures of central tendency: mean, median and mode on sample data.	6M
	(b)	Find variance and standard deviation of the data: 12, 43, 87, 44, 23, 94, 12, 10, 58, 89.	6M
		OR	
2	(a)	Explain about hypothesis testing with example.	6M
	(b)	Discuss about binomial distribution with example.	6M
3	(a)	Write python program to plot bar chart for the sample data.	6M
	(b)	Explain data science life cycle.	6M
		OR	
4	(a)	Write python program to plot line chart for sample data.	6M
	(b)	Discuss about exploratory data analysis.	6M
5	(a)	Explain Support Vector Machine with example.	6M
	(b)	Differentiate between supervised learning and unsupervised learning with examples.	6M
		OR	
6	(a)	Define precision, Recall, ROC metrics.	6M
	(b)	Explain confusion matrix with example.	6M
7	(a)	Explain back propagation algorithm with example.	8M
	(b)	Discuss about RNN.	4M
		OR	
8	(a)	Discuss about CNN.	6M
	(b)	Discuss about LSTM.	6M
9		Explain any image classification algorithm with example.	12M
		OR	
10		Explain social network graphs with example.	12M

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MCA II Semester Supplementary Examinations February 2024

DATA SCIENCE WITH PYTHON

(Master of Computer Applications)

Time: 3 hours Max. Marks: 60

Answer all the questions

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1	(a)	What are distributions in statistics? List out the different distributions.	6M
	(b)	What's the difference between Bernoulli distribution and binomial distribution?	6M
		OR	
2	(a)	What is hypothesis and discuss the need for hypothesis testing?	6M
	(b)	List out the parameters of hypothesis testing and explain it with an example.	6M
3	(a)	Explain the need of Data Science.	6M
	(b)	Discuss major steps in the data science life cycle.	6M
		OR	
4	(a)	Discuss about data visualization.	6M
	(b)	List out and give a brief overview of the graphs used in data visualization.	6M
5	(a)	Define confusion matrix. Explain with an example.	6M
	(b)	Discuss about the different evaluation metrics.	6M
		OR	
6	(a)	Discuss about classification.	6M
	(b)	Give an overview of naïve bayes classifier with an example.	6M
7	(a)	What is back propagation in multi-layer perceptron?	6M
	(b)	Give a brief overview of using perceptron for sentiment analysis.	6M
		OR	
8	(a)	Discuss about the common loss functions.	6M
	(b)	What is the difference between epoch and batch?	6M
9	(a)	Discuss various image processing applications in data science.	6M
	(b)	Give an overview of image classification.	6M
		OR	
10	(a)	What is a recommender system explain with example?	6M
	(b)	Discuss about the types of recommender systems.	6M

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