CBCS SCHEME

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22SCN/SAM/SCS/SDS/SAD12

First Semester M.Tech. Degree Examination, Jan./Feb. 2023
Fundamentals of Data Sciences

Time: 3 hrs.   Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What is data science? What are the differences between data science and big data?	10	L2	CO1
	b.	Explain Datafication and current landscape.	10	L2	CO1
		OR			
Q.2	a.	Explain drew Conway's Venn diagram of data science representation.	10	L2	CO1
	b.	What are statistical inference, populations and samples?	10	L3	CO1
		Module – 2			
Q.3	a.	What is exploratory data analysis in data science?	10	L2	CO2
	b.	Illustrate data science process with the help of neat diagram.	10	L2	CO2
		OR			
Q.4	a.	What are Machine learning algorithms in data science and explain three classes of algorithms.	10	L2	CO2
	b.	What is the significance of linear regression in data science and what are the assumptions?	10	L3	CO2
		Module – 3			
Q.5	a.	Why linear regression technique is not recommended for filtering spam?	10	L3	CO2
	b.	Explain Naïve Bayes algorithm appraising tree diagram to build intuition.	10	L2	CO2
		OR			
Q.6	a.	What are salient features of logistic regression in data science?	10	L2	CO2
	b.	Pronounce the underlying mathematics in M6D logistic regression and write down the differences between logit and inverse logit.	10	L3	CO2
		Module – 4			
Q.7	a.	What are feature generation, feature extraction and wrappers in data science?	10	L2	CO4
	b.	Explain selection criteria in feature extraction process.	10	L2	CO4

		OR			
Q.8	a.	Explain decision tree with an example.	10	L2	CO4
	b.	Explain Random Forest Algorithms in data science.	10	L2	CO4
		Module – 5			
Q.9	a.	What are various terminologies in social network?	10	L2	CO4
	b.	What is MapReduce in data science?	10	L2	CO4
		OR			
Q.10	a.	What are the basic principles of data visualization?	10	L2	CO4
	b.	Why does data scientist require clustering of data?	10	L2	CO4

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