

K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2024 (B. Tech.)		
Program: Information Technology Scheme: II		
Regular Examination: LY Semester: VII		
Course Code: ITC701 and Course Name: Artificial Intelligence and Data Science-II		
Date of Exam: 21/11/2024	Duration: 02.5 Hours	Max. Marks: 60

Instructions: (1) All questions are compulsory. (2) Draw neat diagrams wherever applicable. (3) Assume suitable data, if necessary.				
Q. No.	Question	Max. Marks	CO	BT level
Q 1	Solve any two questions out of three: (05 marks each)	10		
a)	Explain structured and unstructured data with the help of suitable use case.		CO1	U
b)	Differentiate between static charts and dynamic charts with the help of suitable example.		CO2	An
c)	Discuss major differences between soft computing and hard computing approach.		CO5	U
Q 2	Solve any two questions out of three: (05 marks each)	10		
a)	In social network graph how would you examine whether it is connected graph or not? Also discuss which algorithms can be used to determine this.		CO6	An
b)	Illustrate the advantages and disadvantages of Google chart API.		CO3	A
c)	Explain design principles of a Cognitive System.		CO4	U
Q.3	Solve any two questions out of three. (10 marks each)	20		
a)	Explain the process of building a cognitive application in healthcare domain. Also design intuitive dashboard showing data analysis for the cognitive application.		CO4	U
b)	Consider fuzzy sets given below: $X = \left\{ \frac{0.1}{0} + \frac{0.2}{1} + \frac{0.3}{2} + \frac{0.4}{3} + \frac{0.5}{4} \right\}$ $Y = \left\{ \frac{0.5}{0} + \frac{0.4}{1} + \frac{0.3}{2} + \frac{0.2}{3} + \frac{0.1}{4} \right\}$ Perform the following operations on the given fuzzy sets: 1. Union 2. Intersection 3. Complement 4. Algebraic sum 5. Algebraic product 6. Bounded sum 7. Bounded difference		CO5	An
c)	Design and explain content based recommendation system for Movie song recommendation system. Also discuss any three insights possible to derive from this application.		CO6	C

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Q.4	Solve any two questions out of three. (10 marks each)	20		
a)	Demonstrate steps to use D3.js library in HTML/JSP page in detail. Also discuss the need of interactive and animated charts in data visualization.		CO3	A
b)	Discuss text, image and spatial data in AI&DS applications with the help of suitable case study.		CO1	U
c)	Examine the ways to add semantic information in the web page for suitable case study with the help of suitable charts. Also discuss the need of adding semantic information in the web page.		CO2	An
