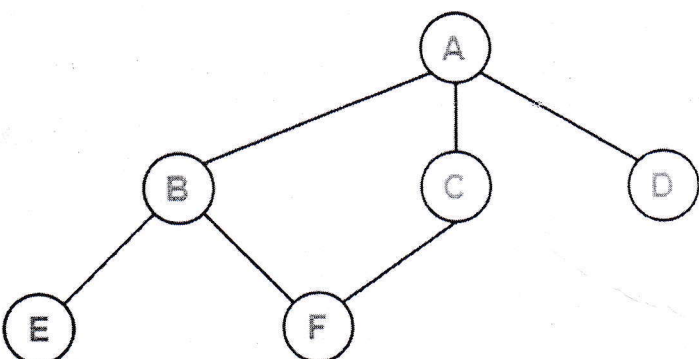


K. J. Somaiya Institute of Technology, Sion, Mumbai-22
(Autonomous College Affiliated to University of Mumbai)

Second Half - Winter Examination 2025		
Program: M.Tech. (Computer Engineering - Artificial Intelligence) Scheme II		
Regular Examination: FY Semester: I		
Course Code: PCEC101 and Course Name: Building Blocks of Artificial Intelligence		
Date of Exam: 21/01/2026	Duration: 2.5 Hours	Max. Marks: 60

Instructions:

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Marks	CO	BT level
Q.1	Solve any Two questions out of Three.	10		
i)	Explain Breadth First Search with example.	5	CO1	U
ii)	Compare Supervised and Unsupervised Learning with example.	5	CO2	A
iii)	Explain Single layer perceptron and Multilayer perceptron.	5	CO3	U
Q.2	Solve any Two questions out of Three.	10		
i)	Explain the basic concepts of Genetic Algorithm, including chromosome, population, and generation.	5	CO4	U
ii)	Differentiate between classical sets and fuzzy sets with suitable examples.	5	CO5	A
iii)	Explain genetic-fuzzy systems with a suitable application.	5	CO6	U
Q.3	Solve any two questions out of three.	20		
i)	Solve using DFS 	10	CO1	A
ii)	Explain CNN Architecture with diagram. Explain challenges in CNN.	10	CO3	U

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iii)	Explain the architecture and working of a fuzzy rule-based system, including fuzzification and defuzzification.	10	CO5	U
Q.4	Solve any two questions out of three.	20		
i)	Explain with diagram Architecture of Neural Networks.	10	CO2	U
ii)	Describe in detail the Genetic Algorithm operators: reproduction, crossover, and mutation, with examples.	10	CO4	A
iii)	Explain neuro-genetic systems in detail and discuss their working with suitable examples.	10	CO6	U
