Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech (Full Time) - END SEMESTER EXAMINATIONS, NOV/DEC 2024
INFORMATION TECHNOLOGY

IT5020 – Social Network Analysis
(Regulation 2019)

Time: 3hrs Max. Marks: 100

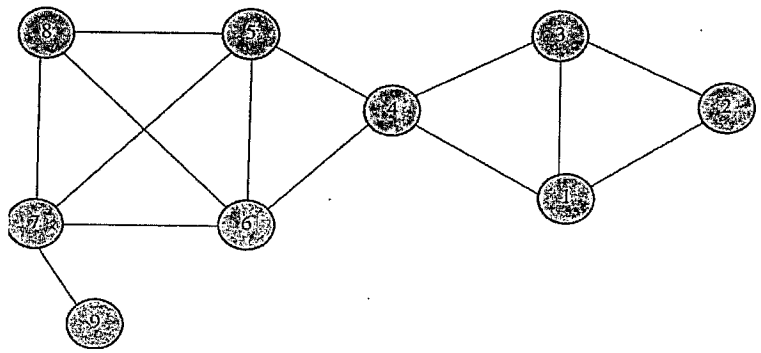
CO 1	To gain knowledge about the empirical and theoretical study of social networks, its structure and social network data sources.
CO 2	To study about the semantic technologies for social network analysis.
CO 3	To gain knowledge on visualization of social networks and its applications.
CO 4	To gain knowledge about social network analysis software for characterizing the network structure.
CO 5	To engage in critical thinking regarding the applicability of social network theory to various sociological phenomena.

BL – Bloom's Taxonomy Levels
(L1 - Remembering, L2 - Understanding, L3 - Applying, L4 - Analyzing, L5 - Evaluating, L6 - Creating)

PART- A (10 x 2 = 20 Marks)
(Answer all Questions)

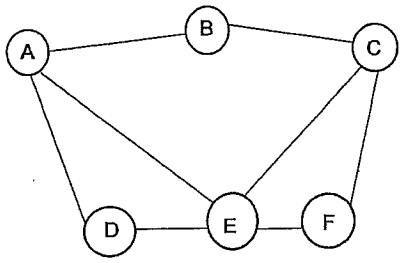
Q. No	Questions	Marks	CO	BL
1	List any four features of social networks.	2	CO1	L2
2	Define betweenness in a graph and state how it is used in social network analysis.	2	CO1	L3
3	What is a social network profile?	2	CO2	L1
4	What are log files? State its significances in social network analysis.	2	CO2	L3
5	Draw a simple ontology for e-commerce domain applications.	2	CO3	L4
6	Highlight any two major differences between RDF and OWL standards that help in social network analysis.	2	CO3	L3
7	Draw a flow chart for the community detection process in social networks.	2	CO4	L3
8	Expand DOSN and mention two applications involving DOSN.	2	CO4	L4
9	How a graph can be represented using adjacency matrix? Give an example.	2	CO5	L1
10	What is a covert network? Give examples.	2	CO5	L1

PART- B (5 x 13 = 65 Marks)

Q. No	Questions	Marks	CO	BL
11 (a)	(i) Calculate the betweenness centrality for all the vertices in the following graph: 	7	CO1	L4
	(ii) Identify all the cliques and their sizes from the above graph.	6		
	(OR)			
11 (b)	(i) Compare and analyze the features of the following electronic sources of social network data: Electronic Discussion Networks, Blogs and Online Communities, Web-based Networks with relevant real time examples for the above sources.	13	CO1	L4
12 (a)	(i) Brief about the different types of Commercial Social Network Profiles and preform quantitative and qualitative analysis of the same.	13	CO2	L3
	(OR)			
12 (b)	(i) Draw and explain the various steps involed in perfoming data mining for social network dat and comapre any two clusteing techniues used for the same.	13	CO2	L3
13 (a)	(i) Discuss about FOAF ontology describing its main classes, properties, tag categories, characteristics of social relationships and applications with examples.	13	CO3	L2
	(OR)			
13 (b)	(i) Discuss with sample scenarios how to aggregate and perform reasoning from social network data.	13	CO3	L2
14 (a)	(i) Briefly analyze the methodology for human behavior understanding and prediction and the architectural framework for the same.	13	CO4	L4
	(OR)			
14 (b)	(i) Compare and contrast various community detection and mining approaches.	13	CO4	L4

15 (a)	(i) Discuss about the various graph representations and visualization approaches with suitable examples and diagrams.	**13**	CO5	L2
	(OR)			
15(b)	(i) Brief how social network analytics can be applied in Bibliometrics domain with relevant examples.	**13**	CO5	L2

PART- C (1 x 15 = 15 Marks)
(Q.No.16 is compulsory)

Q. No	Questions	Marks	CO	BL
16.	Calculate the following for the graph given below and analyze the graph by stating your observations using the below metrics: (i) Degree of each vertices and the graph. (ii) Variance and density of the graph. (iii) Eccentricity for all the vertices. 	**5+5+5**	CO1	L5

----------ALL THE BEST----------