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End Semester Examination 2024

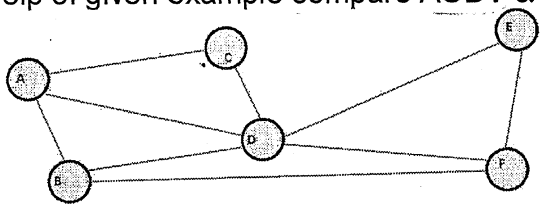
Name of the Course: BCA
Semester: V I
Name of the Paper: Mobile Computing
Paper Code: TBC -604

Time: 3 Hour's
Maximum Marks: 100

Note:

(i) All Questions are compulsory.
(ii) Answer any two sub questions among a,b and c in each main question.
(iii) Total marks in each main question are twenty.
(iv) Each question carries 10 marks.

Q1	**(10 X2 = 20 Marks)**	
(a)	What do you mean by the terms mobility and computing. List out the characteristics of mobile computing. Distinguish between mobile computing and wireless networking.	**CO1**
(b)	Discuss the concept of cellular network. With the help of suitable block diagram explain mobile computing architecture.	
(c)	Sketch the protocol stack of Bluetooth standard and also discuss the architecture of the Bluetooth technology. Differentiate FDMA, TDMA and CDMA.	
Q2	**(10 X2 = 20 Marks)**	
(a)	Discuss the challenges of data management in mobile environment. What do you understand about mobility in wireless environment?	**CO2**
(b)	Why data replication is required for mobile nodes. Discuss various Replication schemes.	
(c)	What is the basic concept of multihopping? With the help of suitable diagram explain multicluster architecture.	
Q3	**(10 X2 = 20 Marks)**	
(a)	Why the traditional IP cannot be used in a mobile network. What are the main differences between the traditional IP and the mobile IP? Discuss the terms Correspondent Node (CN) and Care-of-Address (COA)associated with mobile IP.	**CO3**
(b)	Discuss the accuracy and limitations of different location determination techniques. How can these limitations be mitigated?	
(c)	Contrast the design principles of TCP and wireless communication protocols such as IEEE 802.11 (Wi-Fi) and Bluetooth. Compare TCP and Wireless.	
Q4	**(10 X2 = 20 Marks)**	

(a)	Discuss the ACID properties of transactions and their significance in ensuring data consistency and reliability. How are these properties maintained in mobile transaction processing environments?	CO4
(b)	Discuss the various data dissemination models, including push-based, pull-based, and hybrid approaches.	
(c)	Explore fault tolerance mechanisms for ensuring reliability and availability in mobile networks. What are the challenges of fault tolerance in dynamic and resource-constrained environments?	
Q5	**(10 X2 = 20 Marks)**	CO5
(a)	What are the Several types of routing protocols have been proposed for MANETs. What are the difference between proactive and reactive routing protocol.	
(b)	With the help of given example compare AODV & DSR protocols? 	
(c)	Compare the use of global and local information in routing. Illustrate the Dijkstra's algorithm of shortest path first by taking a suitable example.	