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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
 [AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
 Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 50002

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024
Seventh Semester
Computer Science and Engineering
U19CS731 - MOBILE COMPUTING
(Regulation 2019)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Why “MAC protocol designed for infrastructure based wireless network may not work satisfactory in infrastructure less environment?	2	K1	CO1
2.	Compare GSM network with UMTS network.	2	K2	CO1
3.	List the modifications proposed in single-hop and multi-hop wireless networks.	2	K1	CO2
4.	Illustrate the layers of TCP/IP protocol stack.	2	K2	CO2
5.	What is VLR overflow?	2	K1	CO3
6.	Define Call Routing.	2	K1	CO3
7.	Illustrate the schematic diagram of a router.	2	K2	CO4
8.	Distinguish between DSDV and DSR.	2	K3	CO4
9.	Why is kernel mode called memory resident part?	2	K1	CO5
10.	List the important features supported by the Symbian operating system.	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11.	a) Explain hidden and exposed terminal problem and near and far terminal problem with a neat sketch. (OR)	13	K1	CO1
	b) Describe a list of important functional differences and similarities between 1G, 2G and 3G cellular networks.	13	K1	CO1
12.	a) Discuss the main functions and need of mobile IP. Explain how it can be used when nodes are mobile and describe how it is different from DHCP. (OR)	13	K1	CO2
	b) With a neat diagram explain how packet delivery to and from a mobile node takes place in mobile IP. Explain encapsulation and decapsulation in the context of mobile IP and discuss why they are needed?	13	K1	CO2
13.	a) Analyze the reasons as to why a mobile handset is compact and lightweight and yet provides a large number of features such as roaming, camera, audio and video play and record, Internet browsing, etc., while the traditional landline phone handsets are bulky and provide only limited features. (OR)	13	K3	CO3
	b) Given a scenario where a subscriber is roaming in a new network. Analyze how the HLR and VLR interact to handle an incoming call. Explain the role and protocol architecture of GSM network.	13	K3	CO3
14.	a) Classify the important classes of MANET routing protocols and compare their relative advantages. Compare them with respect to network overhead, routing quality and routing time. (OR)	13	K3	CO4
	b) Examine the process of route discovery, route reply, data delivery and route caching using DSR.	13	K3	CO4
15.	a) i. Explain the special features that an operating system for mobile device needs to support compared to the features provided by a traditional operating system. ii. Explain about Android OS, features, software stack, SDK and their layers. (OR)	7 6	K1	CO5
	b) i. Explain in detail components of iphone OS. List the special features of a Mobile OS. ii. Compare & contrast various popular mobile OS.	7 6	K1	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	Analyze the principle functions of the operating system of a mobile device and explain with an example application implemented on mobile device and the specific operating system service that it make use of it.	15	K4	CO5
	(OR)			
b)	Examine the factors that make mobile ad hoc networks more vulnerable to security attacks compared to the traditional networks. Also explain major types of security attacks that are possible in a mobile ad hoc network. Compose a solution to overcome from these types of attacks.	15	K6	CO4