SVKM's NMIMS

MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING / SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Academic Year: 2022-23

Programme: B. Tech (CSBS) Year: IV Semester: VII

Subject: Mobile Computing

Date: 30 November 2022

Marks: 100
Time: 2.00 pm - 5.00 pm
Durations: 3 (Hrs)
No. of Pages: 02

Final Examination

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover of the Answer Book, which is provided for their use.

1) Question No. 1 is compulsory.
2) Out of the remaining questions, attempt any 4 questions.
3) **In all 5 questions to be attempted.**
4) All questions carry equal marks.
5) **Answer to each new question to be started on a fresh page.**
6) **Figures in brackets on the right-hand side indicate full marks.**
7) **Assume Suitable data if necessary.**

Q1		**Answer briefly**	
CO1; SO1 ; BL2	a.	List the main problems of signal propagation? Illustrate the use of carrier signal in radio communication.	[5]
CO2; SO2 ; BL1	b.	List the limitations of the paging techniques in location management.	[5]
CO3; SO3 ; BL1	c.	Draw WLAN architecture and explain the same.	[5]
CO4; SO4 ; BL1	d.	Explain D2D communication benefits. Highlight the UE modes in D2D.	[5]
Q2 CO2; SO2; BL1	a	Explain group mobility models used for location management.	[5]
CO2; SO2; BL1	b.	How is movement based LU different from distance based LU.	[5]
CO1; SO1 ; BL1	c.	What is spread spectrum? Describe the types of spread spectrum with neat diagram.	[10]
Q3 CO2; SO2; BL1	a.	Describe the concept of HLR and VLR in the call process and highlight when the databases are updated.	[10]
CO3-SO3- BL2	b.	Explain DSR routing protocol in Manets with example. Highlight how optimal path is identified for communication.	[10]

Q4 CO2; SO2; BL2	a.	Discuss the location management parameters in detail.	[10]
CO3-SO3- BL1	b.	Explain the process of data collection and aggregation in WSN with a neat diagram.	[10]
Q5 CO3; SO3; BL1	a.	Explain Scatternet and Piconet. Illustrate the formation of a Piconet and how hidden terminal problem is solved in Pico nets.	[10]
CO3-SO3- BL2	b.	Discuss area coverage and connectivity problems in WSN.	[5]
CO3-SO3- BL1	c.	List the pros and cons of Manets.	[5]
Q6 CO1-SO1; BL2	a.	Explain the concept of frequency reuse in mobile communication. Illustrate how cell splitting enhances the capacity of cellular communication.	[10]
CO3-SO3- BL1	b.	What are cognitive radio networks? Explain how cognitive radios alleviate the loads on the cellular network.	[5]
CO4; SO4 ; BL2	c.	Differentiate between D2D and M2M communication.	[5]
Q7 CO4; SO4; BL1	a.	What is millimeter wave communication in 5G? List the advantages and drawbacks of the same.	[10]
CO1-SO1- BL3	b.	In emergencies, the interactions among people and the environment become much more diverse and the complexity of the emergency responses also becomes much greater. Design the emergency evacuation system to identify safe path for escape and an alert system using WSN and any suitable technology for wireless communication. The emergency can be due to fire, flood etc.	[10]