KUMARAGURU
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B.TECH DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Fifth Semester

INFORMATION TECHNOLOGY

U18ITI5203: Mobile and Pervasive Computing

COURSE OUTCOMES

CO1: Outline the basic concepts and principles in mobile computing.
CO2: Explain GSM architecture and protocols.
CO3: Analyze characteristics of different types of wireless LAN network protocols
CO4: Explain the principles of 4G networks.
CO5: Identify the pervasive and ubiquitous computing characteristics as well as context-aware computing and their applications.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Differentiate Fixed channel Allocation and Dynamic channel Allocation.	CO1	[K$_2$]
2.	If the uplink frequency is fu = 890 MHz, calculate the downlink frequency (fd)	CO1	[K$_3$]
3.	Discuss the reasons for Handoff to be conducted.	CO1	[K$_2$]
4.	List out the components and sub systems of the GSM architecture.	CO2	[K$_2$]
5.	List out the components of operation subsystem and mention its functionalities	CO2	[K$_2$]
6.	List out the important features of GPRS	CO2	[K$_2$]
7.	Compare Infrared with radio transmission.	CO3	[K$_3$]
8.	List out the advantages of LTE.	CO4	[K$_2$]
9.	Explain the term 'context sensitive' in Pervasive computing with a Scenario.	CO5	[K$_3$]
10.	List out the challenges in Pervasive devices	CO5	[K$_2$]

Answer any FIVE Questions:-
PART B (5 x 4 = 20 Marks)
(Answer not more than 80 words)

11.	Explain in detail about hidden terminal and exposed terminal problem with example	CO1	[K$_2$]
12.	Explain about attachment and detachment procedures of GPRS	CO2	[K$_2$]
13.	List out the uses, advantages and disadvantages of Mobile IP.	CO3	[K$_2$]
14.	Compare OFDM, OFDMA, SC-OFDMA.	CO4	[K$_3$]

15.	Explain the evolution from Mainframe computing to pervasive computing with neat diagrams.		CO5	[K$_2$]
16.	Discuss the principle of pervasive computing.		CO5	[K$_2$]

Answer any FIVE Questions:-
PART C (5 x 12 = 60 Marks)
(Answer not more than 300 words)

17.	a)	Compare SDMA, CDMA, TDMA and FDMA.	6	CO1	[K$_3$]
	b)	Discuss about the FDD/FDMA and TDD/TDMA .	6	CO1	[K$_2$]
18.	a)	Explain in detail about mobility management of GSM	6	CO2	[K$_2$]
	b)	Discuss the functionalities of Radio Subsystem components of GSM with neat sketch.	6	CO2	[K$_2$]
19.	a)	Explain the infrastructure architecture and Adhoc architecture of IEEE 802.11 with neat sketch.	8	CO3	[K$_2$]
	b)	List out the traditional routing algorithms and explain their problems	4	CO3	[K$_2$]
20.	a)	Compare all the different approaches for a "mobile" TCP	6	CO3	[K$_3$]
	b)	Discuss the Requirements for LTE to be enhanced over 3G network.	6	CO4	[K$_2$]
21.	a)	Explain in detail about LTE-A network and their components with neat diagram.	8	CO4	[K$_2$]
	b)	Discuss the advantages of OFDM in detail.	4	CO4	[K$_2$]
22.	a)	Discuss the Characteristics of pervasive computing.	4	CO5	[K$_2$]
	b)	Discuss few Applications scenario of Pervasive computing in detail.	8	CO5	[K$_3$]

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