KUMARAGURU
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Register Number:……..

M.E DEGREE EXAMINATIONS: JUNE 2017

(Regulation 2015)

Second Semester

COMPUTER SCIENCE AND ENGINEERING

P15CSTE05: Mobile and Pervasive Computing

COURSE OUTCOMES

CO1: Explain emerging technologies in wireless networks

CO2: Explain about the transmission methods and data management.

CO3: Compare the working of wireless routing protocols.

CO4: Develop Markup language for wireless application protocols.

CO5: Outline the characteristics of pervasive computing applications including the major system components and architectures of the systems.

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Assertion (A): There is a considerable area (handoff area) where a call can be handled by base stations in adjacent cells CO3 [K_1]

   Reason (R): The time a mobile user spent moving across the handoff area is referred as the degradation interval

   a) Both A and R are Individually true and R is the correct explanation of A
   b) Both A and R are Individually true but R is not the correct explanation of A
   c) A is true but R is false
   d) A is false but R is true

2. What are the elements available under link security of Bluetooth technology? CO1 [K_1]

   a) speed
   b) cost
   c) authentication
   d) paging

3. A context-aware application can sense the ---------- and interpret the events that occur within it. CO4 [K_1]

   a) environment
   b) transparency
   c) mobility
   d) signals

4. Match list 1 with list II: CO4 [K_1]

List I	List II
A. Context aware computing	i. appliances, supply chains

B. environmental monitoring	ii. power grids, water distribution
C. Infrastructure protection	iii. intelligent home, responsive environment
D. Industrial sensing and diagnostics	iv. traffic, habitat, security

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	iv	ii	i
c)	ii	iv	iii	i
d)	iii	i	ii	iv

5. Assertion (A): Telecommunications networks are the infrastructure on which the distributed systems rely upon. CO5 [K_L]

Reason (R): Each resource is located on a network node and can be used remotely from other nodes using telecommunications.

a) Both A and R are Individually true and R is the correct explanation of A
b) Both A and R are Individually true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

6. ---------- is used to identify an endpoint of any communication over a physical link. CO1 [K_L]

a) Physical address
b) Link layer address
c) Care-of address
d) Virtual address

7. Tracking scenario raises the following fundamental information processing issues: CO3 [K_2]

1) in collaborative processing, the issue of target detection, localization, tracking and sensor tasking and control

2) in networking, the issues of data naming, aggregation and routing

3) in infrastructure services, the issues of network initialization and discovery, time and location services, fault management and security

a) 1 only
b) 2 only
c) 1,2 &3
d) 3 only

8. ---------- are required by pervasive computing for establishing communication between distributed components. CO5 [K_L]

a) Ubiquitous protocols
b) TCP/IP protocols
c) Open protocols
d) service discovery protocols

9. Which of the following is not a handoff decision? CO3 [K_1]

a) network-controlled handoff
b) mobile-controlled handoff
c) mobile-assisted handoff
d) network- assisted handoff

10. The _____ problem can be solved separately by_____ which requires frequent local communication, and by_____ which requires less frequent, longer CO2 [K_1]

range communication.

1- identity management

2- location estimation

3- tracking

a) 3-2-1 b) 1-3-2

c) 1-2-3 d) 3-1-2

PART B (10 x 2 = 20 Marks)

11.	Give the message formats used in Mobile IP.	CO1	[K_1]
12.	Is IEEE 802.11 and Wi-Fi same? State the purpose of Wi-Fi.	CO1	[K_2]
13.	Give the significance of Bluetooth.	CO2	[K_2]
14.	What is meant by context manager?	CO2	[K_2]
15.	What are the enhancements of WAE to the classic client /server model of the web? What are the functions of this enhancement?	CO3	[K_3]
16.	Write about Handoff in wireless mobile networks.	CO3	[K_1]
17.	What do you mean by pervasive computing?	CO4	[K_2]
18.	Give the need for smart sensors and actuators in pervasive computing.	CO4	[K_1]
19.	What are the basic aspects of a Pervasive Computing environment?	CO5	[K_1]
20.	Specify the role of Context aware sensor networks.	CO5	[K_2]

PART C (6 x 5 = 30 Marks)

21.	Summarize the operation of Mobile IP. Give its message formats.	CO1	[K_2]
22.	Explain the significance of CC/PP exchange protocol.	CO2	[K_2]
23.	Explain the role of Mobility models in location management scheme.	CO3	[K_2]
24.	List the issues involved in pervasive computing technology and discuss its characteristics.	CO4	[K_1]
25.	How is synchronization carried out in a Pervasive Environment? Write brief notes on the syncML tool.	CO5	[K_2]
26.	Explain how the Context aware security is achieved.	CO5	[K_2]

Answer any FOUR Questions

PART D (4 x 10 = 40 Marks)

27.	Discuss the operation of WAP push architecture.	CO1	[K_2]
28.	Explain the different caching schemes adopted in mobile computing environment.	CO2	[K_2]

29.	Explain the different Handoff schemes available in Multiple Traffic Systems.		CO3	[K_2]
30.	(i) Discuss the architecture for pervasive computing scenario.	(4)	CO4	[K_2]
	(ii) Describe the various hardware components involved in pervasive computing devices.	(6)		
31.	Describe about different Service discovery technologies.		CO5	[K_2]

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