SEM VI COMP CBSGS

MOBILE COMM^N & COMPUTING

DT 26/05/2016

Q.P. Code : 581800

MAY - 16

(3 Hours) **| Total Marks : 80**

N.B. : (1) Question No.1 is Compulsory.
(2) Attempt any Three questions out of remaining questions.
(3) Make suitable assumptions whenever necessary.

1. a) Explain in short how Hidden Station Problem is Avoided in WLAN. **10**
   b) What are the Deployment issues of WLL? **10**
   c) What are the general problems of satellite signals travelling from a satellite to a receiver ? **10**
   d) Explain how Mobile originated call (MOC) work. **10**
   e) What are the characteristics of SIM ?

2. a) Why is Mobile IP packet required to be forwarded through a tunneL Explain IP-in-IP Techniques of encapsulation of mobile IP packet. **10**
   b) What are the modifications require to an existing GSM network to be upgraded to GPRS, Explain with the help of diagram. **10**

3. a) Explain in detail HIPERLAN/1 physical layer. **10**
   b) Explain in detail4G architecture. **10**

4. a) Explain in detail Bluetooth Protocol Architecture. **10**
   b) What are the security issues in mobile Computing. **10**

5. a) Compare HIPERLAN 2, BLUETOOTH, IEEE 802.11.
   b) What are the different types of Handover in GSM ?Explain in Detail Intra-MSC handover.

6. Write short notes on the following. **20**
   a) Role of SUMR register in satellite roaming.
   b) Android components.
   c) Location management HLR-VLR scheme.
   d) Digital Signature.

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comp/VI/cBGS/MC&C/14-12-16
Mobile Communication & computing

Q.P. Code : 581802

DEC - 16

(3 Hours) **[Total Marks : 80**

N.B. : (1) Question No.1 is Compulsory.
(2) Attempt any Three questions out of remaining questions.
(3) Make suitable assumptions whenever necessary.

1. a) Explain in short Time slot hierarchy of GSM system. ~~10~~ 04
   b) Explain in short Wireless Local Loop Architecture. ~~10~~ 04
   c) What are the general problems of satellite signals travelling from a satellite to a receiver ? ~~10~~ 04
   d) Explain how Mobile originated call (MOC) work.? ~~10~~ 04
   e) What are the characteristics of SIM? ~~10~~ 04

2. a) List the entities of mobile IP and describe data transfer from a mobile node to a fixed node and vice versa. **10**
   b) What are the modifications require to an existing GSM network to be upgraded to GPRS, Explain with the help of diagram. **10**

3. a) Explain in Detail IEEE 802.11 MAC sublayer. **10**
   b) Compare 3G and 4G. **10**

4. a) Explain in detail Bluetooth Protocol Architecture. **10**
   b) Explain in detail how Subscriber Authentication is done GSM. **10**

5. a) Compare HIPERLAN 2, BLUETOOTH, IEEE 802.11. **10**
   b) What are the different types of Handover in Satellite systems? Explain in Detail. **10**

6. Write short notes on the following: **20**
   a) Satellite orbits.
   b) Android framework.
   c) Cellular IP.
   d) Digital Certificate.

MAY - 17

Q. P. Code : 13148

(3 Hours) **(Marks: 80**

N.B: (1) Question no 1 is compulsory.
(2) Attempt any three of remaining.
(3) Make suitable assumptions wherever necessary and state them.

Q1		Attempt **any 4**	
	A)	What is frequency reuse concept in cellular communication?	05
	B)	Explain various types of handoffs in GSM network	05
	C)	Explain wireless local loop	05
	D)	What is hidden and exposed terminal problem? Discuss solutions to these problems.	05
	E)	What is an antenna. Explain different types of antennae	05
Q2.	A)	Explain in detail Bluetooth protocol architecture	10
	B)	Explain Hiperlan2	10
Q3.	A)	Why is mobile IP packet required to be forwarded through a tunnel. Explain minimal technique of encapsulation	10
	B)	Explain the functioning of I-TCP and SNOOP-TCP giving advantages and disadvantages of both	10
Q4.	A)	Explain GSM in detail	10
	B)	Explain how Mobile Terminated Call works detailing the role of HLR and VLR	10
Q5.	A)	Explain in detail 3G architecture	10
	B)	Explain UTRA-FDD and TDD modes	10
Q6.	A)	Write short notes on(any 02)	20

A) Security issues in mobile computing.
B) UMTS.
C) Android components
D) Satellites (GEO and LEO)

Q. P. Code:-22992

DEC - 17

(3 hours) **[Total Marks: 80]**

NB:

1) Question No.1 is **compulsory.**
2) Attempt any **three** questions out of the remaining questions.
3) Make suitable assumptions wherever necessary.

1. a) Compare WCDMA and CDMA 2000. (5)
   b) What is the relationship between the Base Station and Mobile Switching Centre? Discuss the role of EIR entity of GSM network. (5)
   c) Why do Hidden and Exposed terminal problems arise?How would you propose to solve it? (5)
   d) Define footprint w.r.t satellite systems. Draw and explain how communication within the footprint happens? (5)

2. a) Explain power management in IEEE 802.11 infrastructure networks and ad-hoc networks. (10)
   b) Looking at the HLR/VLR database used in GSM how does this architecture limit the scalability in terms of users, especially moving users? Explain the control channels of GSM. (10)

3. a) How the agent can be discovered using Mobile IP? Give the overlay of agent advertisement packet which includes mobility extension.Also, discuss how tunneling works for Mobile IP using IP-in-IP encapsulation. (10)
   b) Draw and explain the architecture of TETRA and specify the standards and services offered by TETRA. (10)

4. a) Explain the various security issues involved in mobile computing. (10)
   b) Compare and contrast HIPERLAN2 and IEEE 802.11. (10)

5. a) Describe Bluetooth architecture and protocol stack. Also, discuss its limitations. (10)
   b) Explain the data rate enhancement with the help of GPRS network model. What is the maximum data rate obtained by GPRS network? (10)

6. Write short notes on the following :
   a) Dalvik Virtual Machine (DVM). (5)
   b) M-TCP. (5)
   c) Wireless Local Loop (WLL). (5)
   d) QoS in 3G. (5)

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MAY - 18

Q.P. Code: 36774

[Time: Three Hours] [Marks:80]

N.B: Please check whether you have got the right question paper.
1. **Question No. 1 is compulsory.**
2. **Attempt any three questions out of the remaining questions.**
3. **Make suitable assumptions wherever necessary.**

Q.1.	**A)**	Discuss multiplexing in wireless communication.	**10**
	B)	Explain the need of specialized MAC in wireless communication.	**10**
Q.2.	**A)**	Explain in detail Bluetooth protocol architecture.	**10**
	B)	Explain HIPERLAN 1 MAC sublayer.	**10**
Q.3.	**A)**	Explain agent advertisement and discovery registration in mobile networks.	**10**
	B)	Why and how can optimization in mobile IP be achieved.	**10**
Q.4.	**A)**	Explain GSM architecture in detail.	**10**
	B)	Explain types of handoffs in mobility management.	**10**
Q.5.	**A)**	Explain any two TCP for mobile communication.	**10**
	B)	Explain wireless local loop architecture	**10**

Q.6. Write short notes on (any 02) **20**

a) Cryptographic tools for Security in mobile computing.
b) GPRS network nodes.
c) Android layers.
d) Satellites (GEO and LEO)

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Q. P. Code:-22991

DEC - 18

(3 hours)

[Total Marks: 80]

1) Question No.1 is **compulsory.**
2) Attempt any **three** questions out of the remaining questions.
3) Make suitable assumptions wherever necessary.

Q1	A	What is GPRS ? Describe its architecture in detail	10
	B	What are various issues in signal propogation ?	10
Q2	A	Describe GSM in detail.	10
	B	Explain GEO and LEO satellite systems.	10
Q3	A	What is goal of Mobile IP ? How is packet delivery achieved to and from mobile node?	10
	B	Discuss various types of Handoffs in cellular networks.	10
Q4	A	Explain HIPERLAN 2 data link control layer.	10
	B	What are android SDK features	10
Q5	A	Describe Bluetooth protocol stack.	10
	B	What are security issues in mobile computing?	10
Q6		Write short notes on any 02.	20

a) Antennae.
b) Authentication and privacy in GSM.
c) TETRA
d) 4G architecture. Comparison of3G and 4G networks

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MAY - 19

3 hrs.

80 marks

NB:

1. **Question 1 is compulsory**
2. **Attempt any 3 questions out of the remaining questions.**
3. **Assume suitable data whenever required**

Q1)		**Any 4**	
	a)	Explain the Network and Switching Sub-System of GSM architecture.	**5**
	b)	Write short notes on GEO, MEO & LEO	**5**
	c)	Enlist the characteristics of SIM.	**5**
	d)	Describe Inter MSC handover technique.	**5**
Q 2)	**a)**	Explain the 4G LTE architecture with a neat diagram.	**10**
	b)	Compare and contrast HIPERLANI and HIPERLAN 2.	**10**
Q 3)	**a)**	What is the disconnection problem? Explain reaction of M-TCP along with its advantages and disadvantages	**10**
	b)	GSM maintains end-to-end security by retaining the confidentiality of calls and anonymity of the GSM subscriber, Justify this statement.	**10**
Q4)	**a)**	Explain the role of digital signature in mobile security.	**10**
	b)	Write a note on Android Framework.	**10**
Q5)	**a)**	Draw and explain the architecture of TETRA and specify the standards and services offered by TETRA	**10**
	b)	Explain the GPRS architecture in detail. Compare it with GSM architecture.	**10**
Q6)		Write short notes on the following :	**20**
	a)	GSM Burst Structure	
	b)	Agent Advertisement and Discovery	
	c)	Exposed terminal problem with solution	
	d)	Co-channel Interference.	
