Registration No. :

Total number of printed pages – 2

B. Tech

FECE 6402

Seventh Semester (Special) Examination – 2013
PRINCIPLES OF MOBILE COMPUTING
BRANCH : AEIE, EC, ETC, IEE

QUESTION CODE : D 452

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which are compulsory and any five from the rest.
The figures in the right-hand margin indicate marks.

1. Answer the following questions :   2×10
   (a) What is the role of Foreign Agent in a Mobile IP ?
   (b) Explain why WAP gateway is needed for mobile devices to access internet.
   (c) List any two advantages of Bluetooth over Infrared Short Communication.
   (d) How mobile computing applications are classified ? Which one is dominating ? Specify the reasons.
   (e) How HLR and VLR are useful in locating a Mobile station ?
   (f) What is digital sense multiple access ?
   (g) What are the basic groups of logical channels ?
   (h) Cellular Systems uses small cells which are managed by base stations. Mobile network providers install several thousands of such base stations throughout a country, though it is quite expensive. Why they have to go for small cells instead of huge cells ? List out the probable reasons for this.
   (i) Suppose a call comes to GSM network. Identify what type of call this is. Also explain the steps involved in the arrival of the call.
   (j) Explain the two modes of IEEE 802.11 Wireless LAN.

2. (a) Explain GSM architecture in detail with neat diagrams.   5
   (b) Discuss about the mobile computing architecture for a mobile device with a block diagram in detail.   5

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3. (a) Explain a GPRS system architecture along with its various protocol layers in detail with neat block diagrams. 5

   (b) Describe the various CDMA2000 and W-CDMA 3G wireless communication standards with properties. 5

4. (a) What is Mobile IP ? Discuss its evolution and its working in detail with neat diagrams. 5

   (b) What do you mean by WAP ? Discuss the WAP architecture along with WAP 1.1. Gateway and protocols with diagrams. 5

5. (a) Describe the various properties of Bluetooth. Discuss the Piconet of Bluetooth devices architecture with neat diagrams. 5

   (b) What are the IMT-2000 set of standards ? Explain in detail from its inception. 5

6. (a) Discuss about the basic WLL communication system in detail with neat diagrams. How data service is achieved in WLL, explain. What are the four different flavors of WLL systems, discuss. 5

   (b) Discuss about the pervasive web application architecture in detail. 5

7. (a) Discuss about the various components of mobility management operations with neat diagrams. 5

   (b) What are main types of common channel signaling ? Discuss about SS7 in detail. 5

8. Write short notes on any **two** of the following : 5×2

   (a) Routing in IPv6

   (b) MIDlet life cycle

   (c) GEO and LEO Satellite networks

   (d) Differences between WML and HTML.