BE11-R4: WIRELESS AND MOBILE COMMUNICATION

NOTE:

> 1.   Answer question 1 and any FOUR from questions 2 to 7.
> 2.   Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours   **Total Marks: 100**

1.
a)   What are the key characteristics of Palm OS?
b)   Discuss the advantages of Slotted ALOHA over Pure ALOHA.
c)   What are the steps undertaken in the GSM system to ensure transmission security?
d)   What are the differences between Infrastructure and Adhoc network.
e)   With the help of suitable diagram, explain Packet Switching Technique.
f)   What are the key characteristics of Personal Area Network?
g)   How can a computer or laptop be connected to Wi-Max network?

(7x4)

2.
a)   Draw Bluetooth protocol stack and write down functionality of each layer.
b)   Handover is described as "When user moves from one location to another location, Base Transceiver Station (BTS) is changed automatically". What are the types of handover and explain each in brief.

(10+8)

3.
a)   What are the design goals of WLAN?
b)   What is Wireless in Local Loop (WLL)? How does it work to support mobile user?
c)   How is SMS delivered to the destination cellular phone?

(6+6+6)

4.
a)   Draw and explain Architecture of GPRS.
b)   Explain IS-95 Digital Cellular standards.

(10+8)

5.
a)   Windows CE is developed by Microsoft. What are the development tools supported in windows CE?
b)   Explain Following Terms:
      i)   Location Update Procedure
      ii)   Temporary Mobile Subscriber Identity (TMSI)
      iii)   Location Area
      iv)   Routing Area

(6+12)

6.
a)   General Packet Radio Service (GPRS) is mainly used to access internet. Explain GPRS Protocol Stack.
b)   Multiple users can talk to each other, because of Frequency Reuse concept of GSM. Write frequency range allocated to GSM and explain how frequency allocation works.

(9+9)

7.
a)   Global System for Mobile communication is spread worldwide to provide voice communication, irrespective of location of user. Explain GSM Protocol Stack.
b)   What are the qualities of services provided by 3G networks?
c)   What is the security algorithms used in GSM for authentication and data encryption?

(6+6+6)