BE11-R4: WIRELESS & 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) Using appropriate diagrams, explain FDMA and CDMA.
b) Give examples of Bearer Services and Supplementary Services in GSM.
c) Why are RTS and CTS frames used in IEEE 802.11 protocol?
d) Explain the effect of multipath propagation in mobile communication.
e) What are the general requirements for radio access in IMT-2000?
f) GPRS stands for General Packet Radio System. What are the key features of GPRS?
g) Illustrate Piconet and Scatternet in Bluetooth architecture.

(7x4)

2.

a) GPRS stands for General Packet Radio Service. Draw and explain architecture of GPRS.
b) In a slotted ALOHA system the load is 2 packets/slot. Calculate the probability of no collision.

(10+8)

3.

a) How are collision avoided in IEEE 802.11 protocol? Explain the uses of various interframe spaces in the above protocol.
b) Wireless Local Loop (WLL) technology fast and inexpensive access to the telecommunication network. Draw and explain architecture of it.

(10+8)

4.

a) Why is power control needed in CDMA technology and how is it implemented?
b) How is the maximum cell size determined in GSM networks?
c) Base Station Subsystem, Network & switching Subsystem and Operation & Maintenance subsystem are components of GSM. Explain functionalities of each.

(4+5+9)

5.

a) Explain the frequency reuse and Hand off mechanisms in cellular Technology.
b) Draw and Explain layers of Bluetooth protocol stack.

(8+10)

6.

a) Explain architecture of WiMax.
b) What is Handover with respect to GSM? What are the Types of Handover Supported by GSM?
c) Give examples of Personal Area Networks.

(8+7+3)

7.

a) What are the features of J2ME?
b) GSM uses FDM for Channel allocation. How does it allocate channel to each mobile node?
c) What is the use of WEP in IEEE 802.11 protocols? What are its weaknesses?

(6+6+6)