[Time: 3 Hrs]　　　　　　　　　　　　　　　　　　[Marks: 80]

Please check whether you have got the right question paper.

N.B:　1. Question No.1 is compulsory
　　　2. Attempt any three questions out of the remaining Questions
　　　3. Make suitable assumptions wherever, necessary.

Q. 1　**Any 4**
a) Explain hidden terminal problem in mobile communication　　(05)
b) Explain Frequency Reuse in cellular communication.　　(05)
c) Describe HLR, VLR, MSISDN, MSRN　　(05)
d) Explain WLL.　　(05)
e) The need of A3 A5 A8 GSM security protocols.　　(05)

Q. 2　a) Explain U_m interfaces of GSM.　　(10)
　　　b) Explain the reference model of GPRS.　　(10)

Q. 3　a) Explain Snoop and Indirect TCP in detail.　　(10)
　　　b) Explain UMTS basic architecture and frame structure of UMTS- FDD.　　(10)

Q. 4　a) Explain AODV in detail.　　(10)
　　　b) What is Minimal Tunneling in Mobile IP?　　(10)

Q. 5　a) Explain CSMA/CA modes of working of 802.11　　(10)
　　　b) Explain architecture of Bluetooth in detail.　　(10)

Q. 6　**Any 2**　　(20)
a) Electromagnetic spectrum usage for wireless communication
b) Compare 3G and 4G
c) Differentiate amongst HIPERLAN 1, HfPERLAN2

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