

(3 Hours)

[Total Marks : 100

16/12/09
2:30 to 5:30

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions of the remaining **six** questions.
 (3) **Figures to the right** indicate **full marks**.
 (4) Answer to questions should be **grouped** and written **together**.
 (5) Use a **blue/black ink pen** to write answers.

1. (a) Describe in brief each modulation method. 10
 (b) Compare the different data multiplexing techniques. 10
2. (a) Explain convergence of voice, video and image into one flexible network. 10
 (b) How convergence of these network applications (voice, video and image) are implemented in the ATM network? 10
3. (a) State the differences between synchronous and asynchronous communication. 10
 (b) Describe a data communication model. Compare 2G, 3G and 4G wireless communication systems. 10
4. (a) What is traffic management? Explain the different elements of Traffic Management. 10
 (b) Explain the TMN (Telecommunication Management Network) with appropriate diagrams. 10
5. (a) Explain any handoff algorithm for wireless technology. 7
 (b) Why infra-red technology is used in wireless CAN? Describe in brief about the bluetooth technology. 13
6. (a) How key management for symmetric encryption techniques is done using Kerberos? 10
 (b) How is hash function advantageous over encryption for data integration? Explain Message Digest 5 (MD5) algorithm for hash function. 10
7. Write short notes on any **two** of the following :- 20
 (a) FDMA/TDMA in GSM networks
 (b) Digital signatures and certificates
 (c) ISDN
 (d) Adhoc wireless networks.