

***Compact and crisp writing with more illustrations (wherever possible) fetches bonus marks.***

***Total Marks 50 (Q1 carries 15 Marks, rest 5 Marks each)***

1. Answer the following queries on IEEE 802.11e MAC protocol.
  - a. Describe how IEEE 802.11e provides prioritized service to multimedia traffic?
  - b. If a node has both video traffic and best-effort traffic in its MAC queues, when will best-effort frames get delivered? After delivery of video frames? Is it fair? Explain.
  - c. What is the role of virtual collision handler module in 802.11e?
  - d. How do you related 802.11e with 802.11a/b/g/n?
  - e. What is TXOP interval? Is it constant? Do all Access Categories have TXOP intervals? Why or why not?
2. Briefly explain how 802.11n can able to deliver MAC throughputs of 100 Mbps and higher?
3. What measures are taken in 802.11g so that it is backward compatible with 802.11b? What is the main difference in functioning of AP when we configure it in 802.11g mode versus 802.11b/g mode?
4. Briefly explain new power saving features introduced in 802.11n standard.
5. Capture Beacon frames sent by an 802.11g AP and an 802.11n AP in IITH campus. Compare and contrast them.
6. Briefly describe how to implement roaming service in enterprise WLAN?
7. What is “Wi-Fi Direct” standard? How is it related to Ad hoc mode operation of Wi-Fi radios?
8. Briefly explain how 802.11i standard addresses security vulnerabilities of WEP and WPA.