

**M.Tech. IN ADVANCED INFORMATION  
TECHNOLOGY – NETWORKING AND  
TELECOMMUNICATION (MTECHTC)**

**Term-End Examination**

**December, 2014**

**MINI-026 : BROADBAND AND MULTIMEDIA  
TECHNOLOGIES**

*Time : 3 hours*

*Maximum Marks : 100*

**Note :**

- (i) Section I is **compulsory**.
- (ii) In Section II, solve any **five** questions.
- (iii) Assume suitable data wherever required.
- (iv) Draw suitable sketches wherever required.
- (v) *Italicized figures to the right indicate maximum marks.*

**SECTION I**

*All questions in this section are **compulsory**.*

1. (a) Why are ATM cells fixed in size ? What is the advantage of ATM as compared to SONET networks ? 6
- (b) Compare ATM networks with IP networks with respect to data rates, type of medium, quality of service, cost, delay, reliability, devices used, addressing, connection establishment, etc. 9

- 2.** (a) What are the different protocols used in VoIP ? 4
- (b) With the help of signalling protocols, explain a call set-up example in VoIP. 9
- (c) Why are Codec required in VoIP ? 2

## SECTION II

*Answer any **five** questions from this section :*

3. (a) What is the advantage of Digital signal as compared to Analog signal ? 3
- (b) What are the different types of Codec available ? Explain the working of any one of them. 4+7
4. (a) What is the purpose of Gatekeeper in VoIP ? 3
- (b) Why is H.245 call control required in VoIP ? 4
- (c) Explain the steps for H.323 communication establishment. 7
5. (a) Explain ATM architecture with the help of a suitable diagram. 7
- (b) Where is Multiprotocol Label Switching (MPLS) used ? What are its advantages ? 7
6. (a) Explain the commands of SIP. 10
- (b) What are User Agent Clients and User Agent Servers ? 4
7. (a) Discuss the relation between Call, Dialog, Transaction and Message. 10
- (b) What is SIP registration ? 4
8. Explain the functions of the following messages : RRQ, ARQ, BRQ, DRQ, IRQ, IRR and RIP. 14
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