

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

Term-End Examination

December, 2014

00104

**MINI-025 : SPECIAL TOPICS IN NETWORKING AND
TELECOMMUNICATIONS**

***Important Instruction* : This question paper should be attempted only by those candidates who have registered for July, 2010 Batch only.**

Time : 3 hours

Maximum Marks : 100

Note :

- (i) *Assume suitable data wherever required.*
- (ii) *Draw suitable sketches wherever required.*
- (iii) *Answer **two** sections in separate answer booklets.*

SECTION I

*Solve any **four** questions from this section :*

1. (a) What are the basic building blocks of CDMA systems ? Draw a suitable diagram. 7
- (b) Compare GSM and CDMA network architectures. 6

2. (a) With the help of a neat diagram, illustrate the sections of a WDM optical switch. 6
- (b) Explain Dense Wavelength Division Multiplexing (DWDM) and list a few applications of the same. 7
3. (a) What is meant by “black box” and “white box” testing? 7
- (b) Explain why scripting languages are necessary for network testing and give one example. 6
4. (a) What is Multiprotocol Label Switching (MPLS)? What are its advantages and features? 7
- (b) What are the features of Digital Subscriber Line (DSL)? 6
5. (a) What is meant by “Route summarization”? What are its advantages? 7
- (b) Give the call flow for a typical VoIP call. 6
6. What are the requirements of NGN? With the help of suitable diagram, explain IMS based architecture of NGN. 13

SECTION II

*Solve any **four** questions from this section :*

7. (a) Explain the equipments used in H.323 and their functions. 6
- (b) What are the differences between SIP and H.323 protocols ? 6
8. Explain the different codes used in CDMA. Describe how the PN sequence is generated. Also describe the generation and purpose of different Walsh codes. 12
9. With the help of a suitable diagram, explain how SS7 signalling helps in achieving IN services. List any five IN services. 12
10. (a) What are the different phases of "Protocol engineering" ? Explain with the help of a suitable diagram. 6
- (b) What is meant by protocol "Performance testing" ? List any four test types involved in the same. 6

11. (a) Compare ATM networks with optical networks with regard to technology used, data rates, application areas, type of media used, etc. 6
- (b) Explain with the help of a suitable diagram “Fiber Distributed Data Interface” (FDDI) architecture with devices such as SAS, DAS, SAC and DAC. 6
12. Write a ‘C’ program to implement a singly circular linked list and perform basic operations to search, insert and delete a node. 12
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