OTL553 TELECOMMUNICATION NETWORK MANAGEMENT

DETAILED SYLLABUS

OBJECTIVES:

• To understand the concept of network management standards.

• To design the common management information service element model

• To understand the various concept of information modelling.

• To analyze the concept of SNMPv1 and SNMPv2 protocol.

• To analyze the concept of examples of network management.

UNIT I FOUNDATIONS

Network management standards–network management model– organization model–information model abstract syntax notation 1 (ASN.1) – encoding structure– macros–functional model. Network management application functional requirements: Configuration management– fault management–performance management–Error correlation technology–security management– accounting management– common management–report management– polity-based management–service level management–management service–community definitions– capturing the requirements– simple and formal approaches–semi formal and formal notations.

UNIT II COMMON MANAGEMENT INFORMATION SERVICE ELEMENT

CMISE model–service definitions–errors–scooping and filtering features– synchronization–functional units– association services– common management information protocol specification.

UNIT III INFORMATION MODELING FOR TMN

Rationale for information modeling–management information model–object-oriented modeling paradigm– structure of management information–managed object class definition–management information base.

UNIT IV SIMPLE NETWORK MANAGEMENT PROTOCOL

SNMPv1: managed networks–SNMP models– organization model–information model–SNMPv2 communication model–functional model–major changes in SNMPv2–structure of

SSLC, HSE, DIPLOMA, B.E/B.TECH, M.E/M.TECH, MBA, MCA

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management information, MIB–SNMPv2 protocol– compatibility with SNMPv1– SNMPv3–architecture– applications–MIB security, remote monitoring–SMI and MIB– RMQN1 and RMON2.

UNIT V NETWORK MANAGEMENT EXAMPLES

ATM integrated local management interface–ATM MIB–M1– M2–M3– M4– interfaces–ATM digital exchange interface management–digita1 subscriber loop and asymmetric DSL technologies– ADSL configuration management–performance management Network management tools: Network statistics management–network management system–management platform case studies: OPENVIEW–ALMAP.

OUTCOMES:

At the end of the course, students would be able to

• Design and analyze of fault management.

• Analyze the common management information protocol specifications.

• Design and analyze of management information model.

• Design the simple network management protocol.

• Design the various types of network management tools.

TEXT BOOKS:

1. Mani Subramanian, "Network Management: Principles and Practice" Pearson Education, Second edition, 2010

2. Lakshmi G Raman, "Fundamentals of Telecommunications Network Management", Wiley, 1999

REFERENCES:

1. Henry Haojin Wang, "Telecommunication Network Management", Mc- Graw Hill ,1999

2. Salah Aidarous & Thomas Plevyak, "Telecommunication Network Management: Technologies and Implementations" , Wiley,1997