

IGRA NATIONAL UNIVERSITY

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Q1

Define and explain in your own word Radio Network Controller. Explain its main elements.

Ans)

RNC (Radio Network Controller)

= The network element responsible for radio resource control of UTRAN.

= It interface with (normally to one MSC one SGSN)

= Terminates RRC (Radio Resource Control) Protocol that define the messages and procedures between mobile and UTRAN.

= It logically corresponds to the GSM BSC.

* Its main Elements

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The RNC is a functional element of the UMTS RNS (Radio network system)

which controls a number of Node Bs.

Responsibilities of the RNC include.

- = Radio resource management and control.
- = Air interface security.
- = Mobility procedures.
- = System synchronization.

Q2

(a) What are the management functional areas in a Telecom Management Network.

(Ans) TMN management services are classified by OSI system management functional area

These areas are the five OSI application function.

(1) Security Management:-

- = Management of security - monitor and control the availability of security facilities.
- = Security of Management
- = Authenticate management applications and users
- = Support access control management information.

2) Performance Management Pg 4 = 0 =

- = Determine network and system load.
- = Collection of performance information for capacity planning.
- = Need a lot of information, care needed not to overload network with management traffic

* Requirements:

- Event-based operation.
- Convert raw traffic data to "Rates" for trend indication and capacity planning.

3) Accounting Management.

- = Usage Metering for charging and Billing.
- = Set accounting limits.
- = Combining resource usage for complex services.

- ### * Requirement:
- Event-based operation.
 - A generic usage metering framework.

(4) Fault Management.

- = Generation of Error Notification (alarms)
- = Logging of notification at source
- Network Element Testing

★ Requirements.

- = Even based operation including logging
- Generate set of Alarm.
- A Testing Framework.

(5) Configuration Management
Service management

(b) Explain How TMN is applicable in Mobile Network?

Ans) To provide a framework for telecommunications network element to include managing services provided by service providers as well as business management

= The TMN is a protocol model defined by ITU-T for managing open system in a communication network.

TMN that were applied, or consciously not applied, to the development of GSM network management. The organization work within the sub-technical committee and resultant organization of the specification are describe. The article also introduce the model for the management of a GSM network.

Q3

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Explain Master Plan for an Information system.

Ans) Master Plan:-

Information System goals, objectives and ~~architecture~~ architecture

= Organizational goals, objectives, and strategies.

= External environment (industry, government regulation, customers and suppliers.)

= Internal organization constraints such as management philosophy

= Assumptions about business risks and potential consequences.

= Over all goals, objectives, and strategy for the information system.

= Architecture of the information system.

Planning for Information System

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= The complexity of the information resources environment suggests that planning is vital to success.

= The plan describes the structure and content of the information system and how it is to be developed.

= The organization strategic plan should be the basis for the MIS strategic plan.

= The ~~overall~~ responsibility of IS planning is the responsibility of chief information officer (CIO)