Hall Ticket No | | | | | | | | | | | Question Paper Code: AEC523

INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER-I

B.Tech V Semester End Examinations, November - 2019
Regulations: IARE-R16
TELECOMMUNICATIONSWITCHING THEORYANDAPPLICATIONS
(Only for ECE)

Time: 3 hours   **Max. Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1	a)	Define a Switching system? Explain in detail about the basics of a Switching system.	[7M]
	b)	Write about level 2 processing in Distributed Stored program control of telecommunication systems.	[7M]
2	a)	Compare between the electronic switching with the manual switching of telecommunication systems.	[7M]
	b)	Explain in detai about, how a call setup for both local and long distance.	[7M]

UNIT – II

3	a)	What are the telecommunication systems and explain in detail about the different topologies of Data Communication Networks.	[7M]
	b)	What are the components are required for data communication networks and Explain in detail the various components of data communication networks.	[7M]
4	a)	Explain about data communications network architecture with a neat sketch.	[7M]
	b)	Draw the simplified block diagram of a data communication network and explain.	[7M]

UNIT – III

5	a)	Write the differences between Connections oriented and Connection less Services.	[7M]
	b)	Define traffic load and grade of service and explain in detail about the traffic load and grade of service.	[7M]
6	a)	What are the differences between input and output controlled Time division Space Switches techniques?	[7M]
	b)	Explain the combination switching and its advantages.	[7M]

UNIT – IV

7	a)	Expalin about the Switching Hierarchy and Routing used in telephone networks with a neat sketch.	[7M]
	b)	Describe the Formats of Signaling units used in Common channel Signalling	[7M]

8	a)	Explain the Coaxial cable Transmission system with a neat block diagram and give its applications.	[7M]
	b)	What are the different signalling techniques in telecommunication network and explain in detail.	[7M]

UNIT – V

9	a)	What are the ways in which call charges (Tariff) are leveled on customers?	[7M]
	b)	Write in detail about ISDN basic rate access architecture.	[7M]
10	a)	Draw the layered architecture of OSI reference model and discuss the services Provide by v various layer.	[7M]
	b)	Describe the conceptual view of ISDN and what is meant by the term digital pipe	[7M]

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COURSE OBJECTIVES:

I	Learn to consider Tele-traffic demands, quality of service, scalability, performance and cost into consideration to develop requirements and architectures.
II	Underlyingtechnologiesandapplicationsincludingwirelesscommunications, including mobility, optical communications, wave length routing, packet networks and the Internet.
III	CoordinatedwithCS440, computer networks, where communications protocols and the TCP/IP protocols suite a readdressed.

COURSE OUTCOMES:

CO 1	Review,analyse,interpretandexplainthemainconceptsoftelecommunicationnetwork
CO 2	Evaluate, compare, classify and explain the operation of fundamental telecommunication switching network configurations models.
CO 3	Discuss, classify and determine the significance of basic modern signaling system.
CO 4	Analyse,interpretanddiscusstheconceptsofOSI/ISOandexplainitsroleindesignoftelephone network.
CO 5	Analyse,interpretanddiscusstheconceptsIntegratedServicesDigitalNetworks,typesofnetworks, chargingp roceduresandroutingmechanisms.

COURSE LEARNING OUTCOMES:

AEC523.01	Understandbasicandsomeadvancedconceptsandtechniquesoftelecommunicationsnetworks.
AEC523.02	Discuss the simple telephone communication.
AEC523.03	Ability to analyse the characteristics of the telephone systems.
AEC523.04	Ability to analyse the processes used in telecommunication.
AEC523.05	Ability to make use of the parameters in designing telephones witches
AEC523.06	Discussthebasicsettingsintheoperationoftelecommunicationssystemsanddevices.
AEC523.07	Determine the traffic engineering and traffic load Parameters.
AEC523.08	Understand the, grade of service and blocking probability predicttsoccerscores.
AEC523.09	Implement the performance of a digital telephone switch.
AEC523.10	Evaluate the Time Division Multiplexing services.
AEC523.11	ExplainnetworkandtransportlayerfunctionsanddescribeInternetroutingalgorithmsandTCP/IP protocols.
AEC523.12	Understand the concept of ISO/OSI models.
AEC523.13	AcquirethepurposeoflayeringanddescribethecurrentlayeredarchitecturefortheInternet
AEC523.14	Analyse the LAN and metropolitan network.
AEC523.15	Apply the fiber optics into data networks

AEC523.16	Design network synchronization and network management
AEC523.17	Understand the cellular communication networks.
AEC523.18	Develop problem solving approaches as applied in telecommunications networking areas.
AEC523.19	Abletoanalyseperformanceofbasiccommunicationnetworksusingbothanalyticalandsimulation techniques.
AEC523.20	Applythetelecommunicationnetworkdesigntechniquesandpracticalimplementationissues
AEC523.21	Understand the network and protocol architecture.
AEC523.22	Determine the voice data integration.
AEC523.14	Analyse the LAN and metropolitan network.

MAPPING OF SEMESTER END EXAMINATION TO COURSE LEARNING OUTCOMES:

SEE Question No.		CLO Code	Course learning Outcomes	CO Code	Blooms Taxonomy Level
1	a	AEC523.01	Write about basics of a Switching system	CO 1	Understand
	b	AEC523.01	Write about level2 processing in Distributed Stored program control	CO 1	Understand
2	a	AEC523.02	Compare the electronic switching with the manual switching	CO 1	Understand
	b	AEC523.04	Explain how a call setup for both local and long distance	CO 1	Understand
3	a	AEC523.10	Explain different topologies of Data Communication Networks	CO 2	Remember
	b	AEC523.10	Explain in detail the various components of data communication networks	CO 2	Understand
4	a	AEC523.12	Write about data communications network architecture.	CO 2	Understand
	b	AEC523.05	Draw the simplified block diagram of a data communication network and explain	CO 2	Understand
5	a	AEC523.12	Write the differences between Connections oriented and Connection less Services.	CO 3	Remember
	b	AEC523.06	Explain about the traffic load and grade of service.	CO 3	Understand
6	a	AEC523.14	What are the differences between input and output	CO 3	Remember
	b	AEC523.12	Explain the combination switching and its	CO 3	Understand
7	a	AEC523.17	Describe the Switching Hierarchy and Routing used in telephone networks	CO 4	Understand
	b	AEC523.06	Describe the Formats of Signalling units used in Common channel Signalling	CO 4	Remember
8	a	AEC523.13	Write about Coaxial cable Transmission system.	CO 4	Understand
	b	AEC523.09	Explain different signalling techniques in telecommunication network	CO 4	Understand
9	a	AEC523.12	What are the ways in which call charges (Tariff) are leveled on customers?	CO 5	Remember

SEE Question No.		CLO Code	Course learning Outcomes	CO Code	Blooms Taxonomy Level
	b	AEC523.12	Write in detail about ISDN basic rate access Architecture	CO 5	Understand
10	a	AEC523.20	Draw the layered architecture of OSI reference model and discuss the services provided by	CO 5	Remember
	b	AEC523.21	Describe the conceptual view of ISDN and what is meant by the term digital pipe?	CO 5	Understand

Signature of Course Coordinator   **HOD, ECE**