

PNS SCHOOL OF ENGINEERING & TECHNOLOGY

MARSHAGHAI, KENDRAPARA

LESSON PLAN

SESSION-(2022-2023)

BRANCH: ELECTRONICS & TELECOMMUNICATION

BRANCH: ELECTRONICS & TELE COMMUNICA TION	SUBJECT: Th.1- ADVANCE COMMUNICATIO N ENGINEERING	NAME OF THE FACULTY : ER.AMARENDRA SAHOO HOD ,ETC
WEEK	DAY	THEORY
1	1ST	1. RADAR & NAVIGATION AIDS Basic Radar, advantage & applications
	2ND	Working principle of Simple Radar system , its types
	3RD	Radar range equation & Performance factor of radar.
	4TH	Working principle of Pulsed Radar system.
	5th	Function of radar indication and Working principle of moving target indicator.
	6TH	Define Doppler effect & Working principle of C.W Radar.
2	1ST	DOUBT CLEARING/SHORT QUESTION
	2nd	Radar aids to Navigation MTI Radar- working principle
	3rd	Aircraft landing system.
	4TH	Navigation Satellite System.(NAVSAT) & GPS System
	5TH	2. SATELLITE COMMUNICATION Basic Satellite Transponder & Kepler's Laws Satellite Orbital patterns and elevation(LEO,MEO&GEO)
	6TH	Concept of Geostationary Satellite, calculate its height, velocity & round trip time delay & their advantage & disadvantage
3	1ST	DOUBT CLEARING/SHORT QUESTION
	2ND	Working of the Satellite sub system Satellite frequency allocation and frequency bands.
	3RD	General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink)
	4TH	Working principle of direct broadcast system (DBS)
	5TH	Working principle of VSAT system.
	6TH	Define multiple accessing & name various types.

4	1ST	Time Division Multiple Accessing(TDMA) & Code Division Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages.
	2ND	Multiple Accessing (CDMA) – block diagram, its advantages & dis-advantages.
	3RD	DOUBT CLEARING/SHORT QUESTION
	4TH	Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio.
	5TH	Working principle of GPS Receiver & Transmitter& applications.
	6TH	2.13 Optical Satellite Link transmitter & Receiver
5	1ST	3. OPTICAL FIBER COMMUNICATION. Basic principle of Optical communication.
	2ND	Compare the advantage and disadvantage of optical fibres&metallic cable
	3RD	Electromagnetic Frequency and wave line spectrum Types of optical fibres&principles of propogation in a fibre using Ray
	4TH	Optical fiber construction Define terms: Velocity of propagation, Critical angle,
	5TH	Acceptance angle numericalaperture
	6TH	DOUBT CLEARING/SHORT QUESTION
6	1ST	Optical fibre communication system- block diagram & working principle
	2ND	3.8 Modes of propagation and index profile of optical fiber
	3RD	Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode Graded index
	4TH	Multi-mode Graded index
	5TH	Attenuation in optical fibers – Absorption losses, scattering, losses,
	6TH	osses, bending losses, core and cladding losses- Dispersion
7	1ST	Dispersion, waveguide dispersion, Intermodal dispersion
	2ND	Optical sources(Transmitter) & types – LED- semiconductor laser diodes
	3RD	LASER -its working principles, block diagram using laser feedback control circuit
	4TH	Optical detectors – PIN and APD diodes
	5TH	Block diagram using APDConnectors and splices –Optical cables - Couplers
	6TH	Optical repeater & Single Channel system
	1ST	Applications of optical fibres – civil, Industry and Military application

8	2ND	3.16 Concept of Wave Length Division Multiplexing (WDM) principles.
	3RD	4. TELECOMMUNICATION SYSTEM Working of Electronic Telephone System. (Telephone Set)
	4TH	Function of switching system.& Call procedures
	5TH	Space and time switching.
	6TH	Numbering plan of telephone networks (National Schemes & International Numbering)
9	1ST	Working principle of a PBX & Digital EPABX.
	2ND	Working principle of Internet Protocol Telephone
		Working principle of Internet Telephone
	3RD	5. Data Communication Basic concept of Data Communication
	4TH	Architecture, Protocols and Standards
	5TH	Data Communication Circuits
10	6TH	Types of Transmission & Transmission Modes
	1ST	Data Communication codes Basic idea of Error control & Error Detection
	2ND	MODEM & its basic block diagram& common features Voice Band Modem
	3RD	6. WIRELESS COMMUNICATION Basic concept of Cell Phone,frequency reuse channel assignment strategic
	4TH	f co-channel Interference and system capacity of a Cellular Radio systems
	5TH	Concept of improving coverage and capacity in cellular system (Cell Splitting, Sectoring)
11	6TH	Wireless Systems and its Standards.
	1ST	Discuss the GSM (Global System for Mobile) service and features.
	2ND	Architecture of GSM system & GSM mobile station &channel types of GSM system.
	3RD	working of forward and reveres CDMA channel,the frequency and channel specifications
	4TH	Architecture and features of GPRS.
	5TH	Discuss the mobile TCP, IP protocol.
12	6TH	Working of Wireless Application Protocol (WAP).
	1ST	Features of SMS, MMS, 1G,2G, 3G, 4G& 5G Wireless network.
	2ND	3G, 4G& 5G Wireless network.

	3RD	Smart Phone and discuss its features indicate through Block diagram.
	4TH	DOUBT CLEARING/SHORT QUESTION/REVISION
	5TH	DOUBT CLEARING/SHORT QUESTION/REVISION

SN. OF LECTUR

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