Syllabus : Optical network components use and features : Amplifiers, Splitter, Optical switches, WDM : Basic concept, Features. SONET/SDH: Architecture and hierarchy, Ethernet standards of optical network features: IEEE 802.3j, 802.3y, 802.3z.

Syllabus : Working principle, Concepts and basic components of Satellite system: Earth segment, Space segment, Active and passive satellite, Geostationary and geosynchronous satellites, Frequency allocations for satellite services, Uplink and downlink frequency, Satellite frequency bands, Basic terminologies used in satellite communication : Latitude, Longitude, look angle, Elevation angle, Station keeping, Propagation delay time, Velocity, Look angle and foot print. Communication satellite orbits and its types : LEO, MEO, Elliptical orbit and GEO, Parameters and characteristics of various orbits, Kepler's law, Apogee and Perigee heights, Orbit perturbations, Effects of a non spherical earth, Atmospheric drag, Effect of eclipse on satellite motion.

Syllabus : Satellite earth station : Block diagram, Antenna subsystem, LNA, Power subsystem, Telemetry tracking and command (TTAC) subsystem, Attitude control, Spinning satellite stabilization, Momentum wheel stabilization, Station keeping, Thermal control, Transponder: Single, Double conversion and regenerative type, Space link : Equivalent Isotropic Radiated Power (EIRP), Transmission losses: Free space transmission loss, Feeder losses, Antenna misalignment losses, Fixed atmospheric and ionosphere losses, Satellite Applications: GPS: Global positioning system (GPS) : Concept, Working principle, Transmitter and receiver, VSAT: Overview, Architecture, Working principle, Applications.

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