

# CBCS SCHEME

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**BEC515D**

## Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Satellite and Optical Communication

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.  
2. M : Marks, L: Bloom's level, C: Course outcomes.*

Module – 1				M	L	C
Q.1	a.	Explain the following parameters : i) Ascending and descending node ii) Soltices iii) Equinoxes.		6	L1	CO1
	b.	Explain the types of satellite orbits.		7	L1	CO1
	c.	Define and explain the following terms : i) Azimuth angle ii) Elevation angle.		7	L2	CO1
OR						
Q.2	a.	Explain the Kepler's law of planetary motion in detail.		9	L1	CO1
	b.	Explain the types of stabilization and mention its advantages.		5	L1	CO1
	c.	Define the Eclipse and also explain its types.		6	L1	CO1
Module – 2						
Q.3	a.	Explain with Diagram Telemetry Tracking command.		10	L2	CO2
	b.	Explain Earth Station Architecture in detail.		10	L2	CO2
OR						
Q.4	a.	Explain types of earth station.		10	L2	CO2
	b.	Define and explain the following : i) Testing ii) Satellite Tracking.		10	L2	CO2
Module – 3						
Q.5	a.	Mention the advantage of Satellite Vs Terrestrial networks.		10	L2	CO3
	b.	Explain the typical satellite TV networks.		10	L2	CO3
OR						
Q.6	a.	Mention different types of frequency bands and its range? Also explain the any one payload of satellite communication.		10	L2	CO3
	b.	Write short notes on : i) Regional satellite system ii) National satellite system.		10	L1	CO3
Module – 4						
Q.7	a.	Draw a schematic of fiber optic structure and explain its parts.		10	L2	CO4
	b.	Define the following terms : i) Attenuation ii) Absorption iii) Scattering loss.		10	L2	CO4
OR						
Q.8	a.	Explain Propagation modes in single mode fibers.		10	L1	CO4
	b.	Explain while selecting optical fiber material what are the requirement must be satisfied.		10	L2	CO4
Module – 5						
Q.9	a.	Explain the LED structure in detail with cross section drawing.		10	L2	CO5
	b.	Explain the laser diode modes and its threshold conditions.		10	L2	CO5
OR						
Q.10	a.	Explain the key features of WDM		10	L2	CO5
	b.	Explain the operational principles of WDM.		10	L2	CO5

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