GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
Ph.D. (Second Semester-Summer) Examinations, May – 2025
23SPPEEC2013– Advanced Communication System
(ECE)

Time: 3 hrs   Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer *ANY FIVE* Questions.   **(14 x 5 = 70 Marks)   Marks**

1.a.	Draw the Architecture of TCP/IP protocol and explain.	8
b.	Token Bucket Characterization of Long-Range Dependent Traffic. Explain in brief.	6
2.	Explain the Gram-Schmidt orthogonalization process and its significance in signal processing within communication systems.	14
3.a.	Which protocol is used by Integrated Services for signalling of the reservation messages? Explain in detail.	7
b.	How the performance of packet scheduling is analysed? Explain in details.	7
4.	Explain memory modulation schemes in digital communication. How do these schemes overcome the limitations of memoryless modulation?	14
5.a.	Discuss Latency-rate servers a general model for analysis of traffic scheduling algorithms.	7
b.	How Fast address lookups is done using controlled prefix expansion? Explain with neat diagram and give the related expressions.	7
6.a.	Explain the Packet Classification Modules: Hierarchical Tree, Set-Pruning.	7
b.	Describe the architecture of SONET and SDH systems. How do these systems facilitate high-speed data transmission in telecommunication networks?	7
7.	Define multiplexing. Describe different types of multiplexing briefly	14
8.a.	Define system noise temperature and G/T ratio in satellite communication. How do these parameters affect the performance of satellite links?	7
b.	Describe the physical construction characteristics of the following transmission media? If there is more than one type of each media then present the choices of type, and identify the differences between them. (a) Twisted pair, (b) Coaxial cable, (c) Optical fibre cable.	7

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