



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.Sc. DEGREE EXAMINATION – PHYSICS

THIRD SEMESTER – NOVEMBER 2017

16PPH3ES02 – DATA COMMUNICATION AND COMPUTER NETWORKS

Date: 10-11-2017

Dept. No.

Max. : 100 Marks

Time: 09:00-12:00

PART - A

Answer **ALL** questions.

(10 x 2 = 20 marks)

1. Distinguish between the CODEC and MODEM.
2. List the different service primitives.
3. Calculate the thermal power density, if the room temperature is given as 27°C.
4. Give any 2 examples of HDLC commands and responses.
5. Give the structure of the 'hybrid model'.
6. Bring out the difference between a lost frame and damaged frame.
7. Describe the use of 'overprovisioning' to ensure quality of service.
8. Define 'jitter'.
9. Differentiate half duplex and full duplex data exchange.
10. With an example of your own explain the different parts of a URL.

PART - B

Answer **ANY FOUR** questions.

(4 x 7.5 = 30 marks)

11. What are transmission impairments? Discuss the most significant impairments.
12. Explain the CRC method of error detection with necessary steps and a suitable example.
13. Explain the 'client-server' model in data communication.
14. Explain congestion control and discuss the leaky bucket algorithm for achieving good quality of service.
15. Explain Uniform Resource Locators with suitable examples.
16. Enlist the reasons for the failure of the TCP/IP model.

PART - C

Answer **ANY FOUR** questions.

(4 x 12.5 = 50 marks)

17. Explain the three basic encoding techniques for transforming digital data into analog signals.
18. Explain the different types of data framing with neat diagrams.
19. Discuss in detail the salient features of the OSI model and reasons for its failure.
20. Give a detailed description of the most popular network hardware.
21. Discuss the architecture and Services of Electronic mail.
22. Explain the physical description, application and transmission characteristics of (a) twisted pair (b) Coaxial cable and (c) Optical fiber. (3.5+4.5+4.5)