

III B. Tech I Semester Supplementary Examinations, May- 2018

DATA COMMUNICATION

(Common to Computer Science Engineering and Information Technology)

Time: 3 hours

Max. Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answering the question in **Part-A** is compulsory
 3. Answer any **THREE** Questions from **Part-B**
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PART -A

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|---|---|------|
| 1 | a) Define data communication. What are the elements of data communication? | [3M] |
| | b) What is Optical fiber? What are the disadvantages of Optical Fiber Cables? | [4M] |
| | c) Give the concept of delta modulation. | [4M] |
| | d) What is Skip Distance? | [3M] |
| | e) What is Global system for Mobile Communications? | [4M] |
| | f) Distinguish between synchronous and Asynchronous Voice-Band Modems. | [4M] |

PART -B

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|---|---|------|
| 2 | a) With neat sketch explain the layered network structure. | [4M] |
| | b) Explain about Serial and parallel Data Transmission. | [8M] |
| | c) Define i) Information Capacity and ii) Bit rate | [4M] |
| 3 | a) Write about the two commonly used fiber types due to variations in the Material Composition. | [3M] |
| | b) Derive the Expression for quantum efficiency and optical power emitted from the LED. | [8M] |
| | c) Derive the general equation of coupling loss in single mode fiber connectors. | [5M] |
| 4 | a) Explain in detail about the operation of PCM transmitter and receiver. | [8M] |
| | b) Discuss about Digital Line Encoding in detail. | [8M] |
| 5 | a) Explain the Microwave communication system with neat block diagram. | [8M] |
| | b) Derive the expression for Free-Space Path Loss. | [8M] |
| 6 | a) Explain the Basic Telephone Call Procedures. | [8M] |
| | b) Describe the digital cellular mobile systems and the limitations of AMPS standard. | [8M] |
| 7 | a) What are the different methods of error detection and explain any two methods. | [8M] |
| | b) Write short notes on Voice- Band Data Communication Modems. | [8M] |

