

Code No: J5801/R16

M. Tech. II Semester Regular Examinations, May-2017

**COMPUTER NETWORKS**

Computer Science &amp; Engineering (58)

Time: 3 Hours

Max. Marks: 60

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*Answer any FIVE Questions*  
*All Questions Carry Equal Marks*

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|------|-------------------------------------------------------------------------------------------------------------------------------|----|
| 1. a | Define Network Topology? Explain different Topologies used in connecting devices.                                             | 6  |
| b    | Differentiate OSI reference model with the TCP/IP Reference model.                                                            | 6  |
| 2. a | Describe Twisted Pair cable and explain its performance.                                                                      | 6  |
| b    | Explain in detail about the Frequency Division Multiplexing.                                                                  | 6  |
| 3. a | Given 1101011011 data frame and generator polynomial $G(x) = x^4 + x + 1$ . Derive the transmitted frame using CRC.           | 6  |
| b    | What is the need of Flow control? Explain the common approaches for flow control in data link layer.                          | 6  |
| 4.   | Explain Go-Back-N Automatic Repeat Request protocol. What are the pros and cons of Go-Back-N ARQ protocol?                    | 12 |
| 5. a | Explain how slotted ALOHA solves the problem of Channel allocation.                                                           | 6  |
| b    | Explain how Bit Map Protocol is used as a Collision Free Protocol.                                                            | 6  |
| 6. a | What are the five key assumptions in Dynamic Channel Allocation in LANs and MANs? Explain.                                    | 6  |
| b    | With a neat diagram explain 802.11 Frame structure.                                                                           | 6  |
| 7.   | What is the drawback of leaky bucket algorithm? Explain how token bucket algorithm overcomes the problem with a neat diagram. | 12 |
| 8. a | Differentiate Virtual-Circuit and Datagram Subnets.                                                                           | 6  |
| b    | With suitable example explain the shortest path routing algorithm.                                                            | 6  |

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