

**JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT**

**TEST-1 EXAMINATION- FEBRUARY -2018**

**B.Tech VI Semester (CSE & IT)**

COURSE CODE: 10B11CI611

MAX. MARKS: 15

COURSE NAME: Computer Networks

COURSE CREDITS: 04

MAX. TIME: 1 HRS

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**Note:** All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

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**Ques 1 [2+3 = 5 Marks]** Explain the difference between OSI and the TCP/IP reference model in brief with suitable diagram. Further, explain the major functionality and important services of OSI reference model in brief.

**Ques 2 [2+3 = 5 Marks]** List the difference (at least five) between circuit switching, datagram packet switching and virtual-circuit packet switching. Suppose that 'M' bits of user data are to be transmitted over a k-hop path in a packet-switched network as a series of packets, each containing 'X' data bits and 'P' header bits, with  $M > X + P$ . The bit rate of the lines is 'B' bps and the propagation delay is negligible. Determine the end-to-end delay and what value of 'X' minimizes the total delay?

**Ques 3 [1+4=5 Marks]** Explain the analog-analog conversion techniques in brief. A multiplexer combines four 100-kbps channels using a time slot of 2 bits. Show the output with four arbitrary inputs. What is the frame rate? What is the frame duration? What is the bit rate?