

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- February 2018

M.Tech. IInd Semester

COURSE CODE: 11M1WCI432

MAX. MARKS:15

COURSE NAME: Performance Evaluation of Networks

COURSE CREDITS: 3

MAX. TIME: One Hr

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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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**Que-1: [04 Marks]** Suppose that packets arrive to a router at the rate of 200 packets/second according to a Poisson process. At the router, a packet is directed with probability 0.3 to outgoing link 1 and with probability 0.7 to outgoing link 2. Suppose a packet P1 was directed to link 1 when it was idle. Packet transmission time is exactly 20ms. What is the probability that another packet will arrive at Link 1 before packet P1's transmission is done?

**Que-2: [04 Marks]** Define or Explain the following terms/statements-

- a. Workload
- b. Packet switching and Circuit switching
- c. Computational challenges in sensor networks
- d. Dynamic voltage scaling
- e. Doppler-shift

**Que-3: [7 Marks]** Consider a computer network for performance study. Briefly describe the system and list-

- a. Services
- b. Performance metrics
- c. System parameters
- d. Workload parameters
- e. Factor and their ranges
- f. Evaluation techniques
- g. Workload

Justify your choices.