JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

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Test-2 (7th Sem. B.Tech. ECE)

Course Code:18B1WEC732
Course Title: Design of Dependable Systems

Maxm. Marks:25
Duration: 1.5 Hrs

Note: Use of mobile phone in the examination hall shall be treated as a case of unfair means.

Q-1: (a) Define the service availability in communication network. Also, describe the hard failures and soft failures. [1+2]

(b) Calculate the availability of communication for '12 hours down-time in 40 years'. [2]

Q-2: (a) Compare the features of computer communication network w.r.t. old PSTN in terms of reliability, performance and recovery. [2.5]

(b) Differentiate the best-efforts and predictable services in case of computer communication network. [2.5]

Q-3: (a) Propose a mathematical model for computing a path in a computer network having minimum delay. [2]

(b) Describe the performance and reliability in a computer communication network for first three layers i.e. layer 1, layer 2, and layer 3 of OSI model. [3]

Q-4: (a) How the resilience a of network is defined? Describe robustness as an indicator of network performance under perturbative conditions. [1+1]

(b) Give the framework of risk-aware networking in terms of assessment, modelling and response. [3]

Q-5: Write short notes on each of the following: [1X5]

(a) Recovery, Protection and Restoration

(b) Connectivity-base dependability

(c) Disruption Tolerance

(d) Performablity

(e) Risk management cycle