

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-1 EXAMINATION- Feb. 2019

B.Tech.(ECE), 8th Sem.

COURSE CODE: 18B1WEC831

MAX. MARKS: 15

COURSE NAME: Networked Embedded Control Systems

COURSE CREDIT: 03

MAX. TIME: 1 HR.

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

Q1. (a) Compare the shared network configuration with hierarchical structure. [2]

(b) Give your comments on the following:

(i) Control of actuator over a network.

(ii) Bandwidth scheduling in NCS

(iii) Network security issues in NCS

[3]

Q2. (a) Explain a traditional thermal control system with the help of its closed loop control system block diagram. Also convert this system into a networked control system.

[3]

(b) What is effect of the presence of network on the stability of networked based system? Drive a suitable expression also.

[2]

Q-3. (a) Explain all the delays involved in the NCS-based based system. [1.5]

[1.5]

(b) The effect of delay on NCS-based system vis-à-vis to local control system, explain. Consider the trajectory of robot for illustration.

[2]

(c) Explain in brief various mode of communication suitable for NCS-based communication.

[1.5]