B.E. DEGREE EXAMINATIONS: NOV/DEC 2010

Seventh Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

U07EI703: Computer Network and Distributed Control System

Time: Three Hours   **Maximum Marks: 100**

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. Dialog control is the function of the _____ layer

    (a) Transport   (b) Session   (c) Presentation   (d) Application

2. In CSMA/CD , the number of collisions is _____that in MA.

    (a) greater than   (b) twice   (c) equal to   (d) less than

3. Gateways function in which OSI layers

    (a) the lower three   (b) the upper four

    (c) all seven   (d) all but the physical layer

4. In Ethernet, the source address field in the MAC frame is _____ address.

    (a) the original sender's physical   (b) the previous station's physical

    (c) the next destination's physical   (d) the original sender's service port

5. The function of LCU in DCS is

    (a) to acquire data   (b) to communicate other devices

    (c) to perform closed loop control   (d) to supervise and monitor

6. The configuration - C architecture of DCS requires _____ number of controllers for 12 loops.

    (a) 12   (b) 6   (c) 2   (d) 3

7. Redundant control structure is employed in DCS to

    (a) ensure reliability   (b) reduce cost

    (c) minimize components (d) provide flexibility

8. A graphics capability in which the instrument engineer can draw the control configuration is available in

    (a) High Level Operator Interface   (b) High Level Engineering Interface

    (c) Low Level Operator Interface   (d) Low Level Engineering Interface

9. The access mechanism used in field bus is

    (a) Peer-to-peer   (b) Point- to- Point   (c) Master /slave   (d) Token passing

10. The protocol used to superimpose digital signals on the standard 4-20 mA analog signals is

    (a) Mod bus   (b) Field bus   (c) Profi bus   (d) HART protocol

PART B (10 x 2 = 20 Marks)

11. What is Token passing access mechanism?

12. What are the switching methods?

13. What is router?

14. What is Network Control Protocol?

15. What are the differences between LLHI and HLHI?

16. State the advantages of using communication facilities in DCS.

17. What are the different types of displays in DCS?

18. What are the functions performed by engineering interface?

19. Define interoperability.

20. Give any four benefits of using HART protocol?

PART C (5 x 14 = 70 Marks)

21. a) Explain in detail the different layers in OSI model and compare with TCP/IP internet model.

(OR)

b) Explain in detail the High Level Data link control protocol.

22. a) Explain the open system with bridge configuration.

(OR)

b). Explain in detail about Ethernet configuration.

23. a) Draw the block diagram of DCS and explain the building blocks in detail.

(OR)

b) (i) Briefly discuss the network topologies in the communication of DCS   (7)

   (ii) Write short notes on communication medium in DCS   (7)

24. a) Describe the types of operator interfaces in detail.

(OR)

b) Explain in detail the requirements of engineering interfaces.

25. a) Describe the features of Field bus protocol.

(OR)

b) Explain in detail about HART protocol.

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