Q. Code: 837915

B.E./B.TECH. Degree Examination, December 2020

Fourth Semester

CS16401-COMPUTER NETWORKS

(Regulation 2016)

Time: Three hours Maximum : 80 Marks

Answer **ALL** questions

PART A - (8 X 2 = 16 marks)

1. Which network topology requires a central controller or hub?

   a) Star b) Mesh c) Ring d) Bus

2. Which of the following tasks is not done by data link layer?

   a) framing b) error control c) flow control d) channel coding

3. A 4 byte IP address consists of _____

   a) only network address b) only host address

   c) network address & host address d) network address & MAC address

4. An endpoint of an inter-process communication flow across a computer network is called _____

   a) socket b) pipe c) port d) machine

5. Write the parameters used to measure network performance.
6. How bit stuffing is performed?
7. How do routers differentiate the incoming unicast , broadcast and multicast IP packets.
8. How do fast re-transmit mechanism of TCP works?

PART B - (4 X16 = 64 marks)

09. (a) Draw the ISO-OSI architecture and discuss the functions performed by each layer. **(16)**

(OR)

(b) (i) Explain the challenges faced in building a network. **(8)**

(ii) Obtain the 4 bit CRC code for the data bit sequence 10011011100 using the polynomial x^4 +x^2 +1. **(8)**

10. (a) (i) Discuss the working of CSMA/CD protocol. **(8)**

(ii) Explain the functions of MAC layer present in IEEE 802.11 with necessary diagrams. **(8)**

(OR)

(b) Discuss the working of Email in detail. **(16)**

11. (a) With an example network scenario explain the mechanism of Routing Information Protocol and specify the routing table contents. **(16)**

(OR)

(b) Discuss the fundamentals and advantages of open shortest path first protocol. **(16)**

12. (a) Discuss the random early deduction mechanism and derive the expression for drop probability. **(16)**

(OR)

(b) (i) Illustrate any one TCP congestion avoidance mechanism. **(8)**

(ii) Brief about the approaches used to provide QoS support. **(8)**