



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

SEVENTH SEMESTER B.TECH. (INSTRUMENTATION AND CONTROL ENGG.)

END SEMESTER DEGREE EXAMINATIONS, DECEMBER - 2019

SUBJECT: COMPUTER NETWORKS AND PROTOCOLS [ICE 4017]

TIME: 3 HOURS

MAX. MARKS: 50

Instructions to candidates :Answer ALL questions and missing data may be suitably assumed.

- 1A. Describe the TCP/IP model of a computer network. Discuss the function of each layer in detail.
1B. Write a note on different types of network topology.
1C. What are the different types and function of a protocol? Explain. (4+3+3)
- 2A. Write a note on the concept of virtualization with necessary figures.
2B. An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 sub blocks of addresses to use in its three subnets as given below:
☐ One sub block of 120 addresses.
☐ One sub block of 60 addresses.
☐ One sub block of 10 addresses.
Design the subnetworks and find the information about each network.
- 2C. Write a note on classful addressing. (3+3+4)
- 3A. What do you understand about supernetting? Explain with an example
3B. Show the routing tables for R1 for the network shown in Figure Q3B. If R1 receives a packet with destination address 192.16.7.14, show how the packet is forwarded.
3C. Describe in detail shortest path algorithm with appropriate example. (3+3+4)
- 4A. Explain the principle of STDM with necessary figure.
4B. Generate a CRC code for the data word 1010101010 using the divisor 1011. (5+5)
- 5A. Write a note on different types of connecting devices used in internet.
5B. Discuss the different types of services provided by cloud computing.
5C. What are the application architecture models used in a datacentre? Explain. (3+4+3)

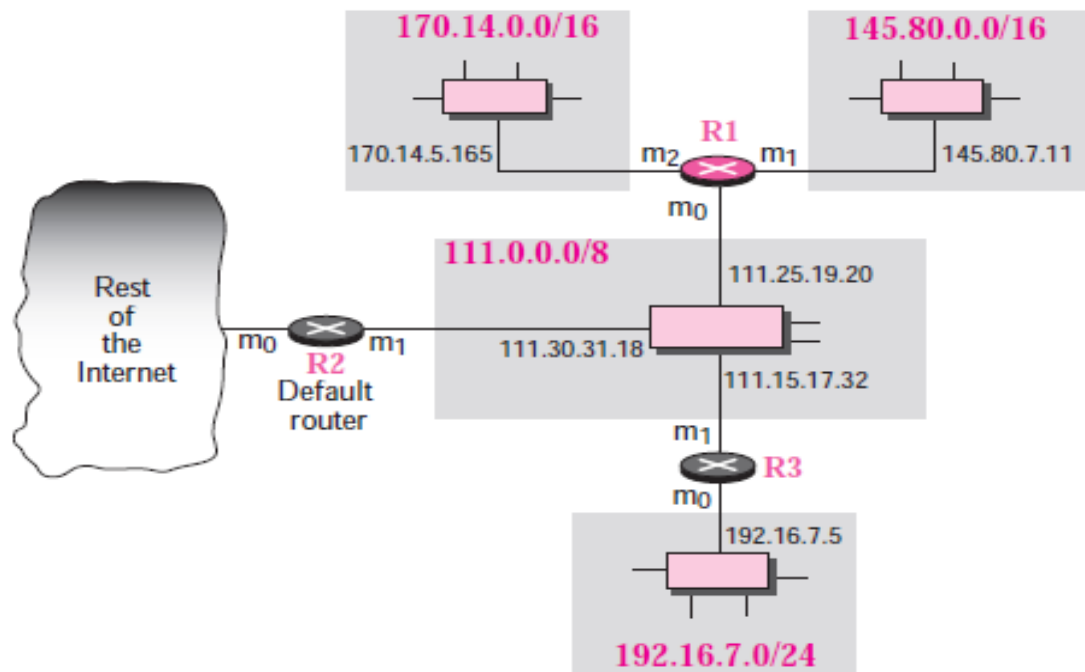


Fig Q3B.
