

MANIPAL (A constituent unit of MAHE, Manipal)

FIFTH SEMESTER BTECH. (INFORMATION TECHNOLOGY/COMPUTER AND COMMUNICATION ENGINEERING) END SEMESTER EXAMINATIONS, DECEMBER 2021 – JANUARY 2022 SUBJECT: OPEN ELECTIVE – 1 NETWORKING WITH TCP/IP [ICT 4305] REVISED CREDIT SYSTEM

(01/01/2021)

TIME: 3 HOURS

MAX. MARKS: 20

Instructions to candidates

- Answer **ALL** questions.
- Missing data, if any, may be suitably assumed.

Q. No.	Questions	M *	C*	A *	B *
1A.	Given a sample network in Figure Q.1A, Construct the Routing table for the Router D using both Distance vector and Dijkstra's shortest path routing algorithm. (3+2)	5	CO5	3, 5, 6, 7, 8, 11 13 14	3
1B.	Distinguish the term topology from Topography. Given the routing table in Figure Q.1B, write the Topology explicitly specifying the IP addresses.Subnet addressNext-hop addressInterface number145.14.0.0m0145.14.64.0m1145.14.128.0m2145.14.192.0m30.0.0.0default routerm4	3	CO4	3, 5, 6, 7, 8, 11 13	3
	Figure Q.1B				

1C.	Draw the necessary line-diagrams to describe the data transfer process with slow start phase. Assume suitable segment numbering and Acknowledgement policy.	2	CO3	1, 3, 5, 11 13	3
2A.	Summarise the process of "Name to address " and "Address to name" Mapping considering the various steps including the type of resolution. An ISP is granted a address block 35.48.5.0/19. The ISP wants to allocate addresses as follows: Group 1: 16 customers, each with 64 addresses Group 2: 32 customers, each with 32 addresses Group 3: 128 customers, each with 08 addresses i). Find the subnet mask, first and last addresses of 1 st customer of each group	5	CO3		3
2B.	In technical terms, discuss the difference between FTP and TFTP protocols used for file transfer in internet. A router receives an IP packet with source IP address 182.12.15.10. When the IP header is processed, it finds that the content of header HLEN field is 3. Identify the ICMP message generated by the router.	3	CO2 CO4	3, 5, 6, 7, 8, 11 13	3
2C.	Elucidate the process of checksum computation in IP and compare it with that of UDP.	2	CO3	1, 3, 5, 11 13	3