Code No: 155AV JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD B. Tech III Year I Semester Examinations, February - 2022 A COMMUNICATIONS AND NETWORKS A COMMUNICATIONS AND NETWORKS A

DATA COMMUNICATIONS AND NETWORKS (Electronics and Communication Engineering) Time: 3 hours Max. Marks: 75 Answer any five questions All questions carry equal marks During the communication, how the various layers exchange information in OSI Model. Describe with the help of suitable diagram, 2. Explain the TCP/IP architecture. Show the comparison with the OSI model with the help of schematic diagram. 3. Consider a message D, presented by the following polynomial $x^{19} + x^{17} + x^{16} + x^{13} + x^{12}$ + $x^{11} + x^9 + x^5 + x^2 + 1$, which is transmitted using the standard Cyclic Redundancy Check (CRC) method. The generator polynomial is $x^7 + x^5 + x^4 + x^3 + x^2 + 1$. Find the CRC and show the actual bit string to be transmitted. 4.a) Differentiate between Pure ALOHA and slotted ALOHA protocol. In a digital system with 8 input links are multiplexed using STDM. Each input source is b) creating 1024 bits per second. Each frame contains 8 bits from each source and adds 1 bit as a framing bit. Compute the number of frame transmitted per second and the data capacity of the link. 5.a) Explain the network service model with a neat sketch. b) Explain the format of IPV4 addressing. [8+7] 6. Illustrate in detail about the concept of forwarding and addressing in the internet. [15] 7.a) Discuss about the Round-Trip Time Estimation and Timeout. Why does UDP exist? Would it not have been enough to just let user processes send

7.a) Discuss about the Round-Trip Time Estimation and Timeout.
Why does UDP exist? Would it not have been enough to just let user processes send raw IP packets? Justify answer.

8. Explain the Transport Services Available to Applications.

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