MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

I SEMESTER M.TECH. (CSE/CSIS)

GRADE IMPROVEMENT/MAKE UP EXAMINATION-Aug 2021

SUBJECT: ADVANCED COMPUTER NETWORKS (CSE 5151)

REVISED CREDIT SYSTEM

(09/08/2021)

Time: 2 Hours MAX.MARKS: 40

Instructions to Candidates:

- Answer any FOUR Full questions out of SIX questions.
- Any data missing may be suitably assumed.

1A.	Explain the classification of UAVs based on weight, altitude and endurance. It has been decided to deploy UAVs to monitor landslides caused by heavy rains in a thickly populated region. Assume you are in charge of this operation. Explain the following with proper justifications: i. Which topology will you choose for this UAV network and why? Explain the topology. ii. Which mobility model will you choose for this UAV network and why? Explain the mobility model.	5
1B.	What are the Multi-UAV network constraints and advantages? Briefly explain the different Geographic 3D UAV routing protocols.	5
2A.	Explain media independent handover of UAVs. Draw a neat diagram depicting logical view of SDN architecture and explain.	5
2B.	Compare a business policy with IT policy. Give a suitable example for each. How are policies defined in CISCO's SDN solution? How does SDN solve data center problems?	5
3A.	What is an overlay network? What are its advantages ? A cloud service provider uses a overlay network to provide network isolation among its clients. 12 IT companies approach this service provider for network infrastructure service. Among them 2 companies have 2 lakh clients each, 5 have 2.5 lakh clients each, 3 have 5 lakh clients each, and remaining have 6 lakh clients each. Each client has 500 to 1000 end users. Each client needs a dedicated network. Can the cloud service provider provide the required network infrastructure to these companies? What is	5

the maximum number of clients that can be supported? Justify your answer by giving the correct statistics. Show all the steps of your answer.

3B.	What is Onix? Explain all its components. How is it different from E-W bridge?	5
4A.	What are the standards for data center infrastructure? Explain the types of data centers.	5
4B.	What are the uses of cloud computing? Explain the emerging data center trends.	5
5A.	What are the properties of video? Explain the different CDN cluster selection strategies.	5
5B.	What are the disadvantages of UDP streaming? Recall the two FEC schemes for VoIP. Suppose the first scheme generates a redundant chunk for every four original chunks. Suppose the second scheme uses a low-bit rate encoding whose transmission rate is 25 percent of the transmission rate of the nominal stream. a. How much additional bandwidth does each scheme require? b. How do the two schemes perform if the first packet is lost in every group of five packets? Which scheme will have better audio quality? c. If the first packet is lost in every group of two packets, which scheme will have better audio quality?	5
6A.	What are forwarding PHBs? Draw a neat diagram and explain a public fiber network architecture.	5
6B.	Draw a neat diagram of WDM wave length routing network, explain all its components and the working mechanism.	5

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