APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY
08 PALAKKAD CLUSTER

Q. P. Code: CSE0820151B-I   (Pages: 3)

Name: ....
Reg. No:..

FIRST SEMESTER M.TECH. DEGREE EXAMINATION MARCH 2021

Branch: Computer Science and Engineering   Specialization: Computer Science and Engineering

08CS6051(B) ADVANCED NETWORK TECHNOLOGIES

(Common to CSE)

Time: 2 hour 15 minutes   Max. Marks: 60

Answer all six questions.

Modules 1 to 6: Part 'a' of each question is compulsory and answer either part 'b' or part 'c' of each question.

Q. No.	Module 1	Marks
1.a	How does 'Cookies' compensate stateless behaviour of HTTP server?	3

Answer b or c

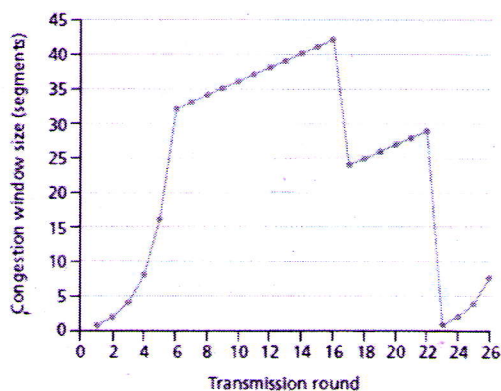|		
b	List six access technologies. Classify each one as home access, enterprise access, or wide-area wireless access.	6
c	Draw the flow diagram of DNS 'Name Resolution' process using (i) both recursive and iterative queries and (ii) only using recursive queries.	6

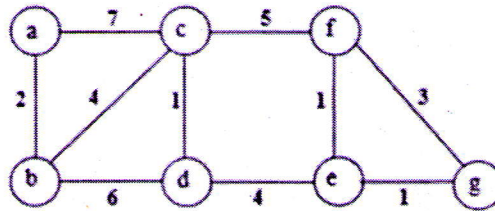| Q. No.	Module 2	Marks
2.a	Describe why an application developer might choose to run an application over UDP rather than TCP.	3

Answer b or c

b	Compare Go-Back N, Selective Repeat, and TCP.	6

c   Assuming TCP's Additive Increase Multiplicative Decrease (AIMD)   6
    congestion control algorithm, answer the following questions based on the
    graph given below. Each answer must accompany proper justification.

    a. Identify the intervals of time when TCP slow start is operating.

    b. Identify the intervals of time when TCP congestion avoidance is
        operating.

    c. After the 16th transmission round, is segment loss detected by a
        triple duplicate ACK or by a timeout?

    d. After the 22nd transmission round, is segment loss detected by a
        triple duplicate ACK or by a timeout?

    e. What is the initial value of ssthresh at the first transmission
        round?

    f. What is the value of ssthresh at the 18th transmission round?

Q. No.	Module 3	Marks
3.a	How does BGP use the NEXT-HOP attribute?	3

Answer b or c

b	An organization is assigned the network number 140.25.0.0/16 and it must create a set of subnets that supports up to 60 hosts on each subnet. Define and subnet mask and subnet addresses.	6

c Consider the following network. With the indicated link costs, use Dijkstra's **6**
shortest-path algorithm to compute the shortest path from 'a' to all network
nodes.

Q. No.	Module 4	Marks
4.a	Differentiate transport mode and tunnel mode of VPN.	**3**

<div align="center">

Answer b or c

</div>

b	Present the concept of 'Distributed Computing' with a proper case study.	**6**
c	Differentiate two types of 'Forward Error Correction' (FEC) schemes used in Voice Over IP (VOIP).	**6**

Q. No.	Module 5	Marks
5.a	Storage Area Networking (SAN) provides 'Universal Storage Connectivity'. Justify the statement.	**4**

<div align="center">

Answer b or c

</div>

b	List and discuss various fibre channel topologies used with SAN.	**8**
c	Draw basic Storage Area Networking Architecture and its various configurations.	**8**

Q. No.	Module 6	Marks
6.a	Compare Linux, Windows and Mac operating systems.	**4**

<div align="center">

Answer b or c

</div>

b	i.	Identify limitations of 'ping' utility.	**4**
	ii.	How TTL field from IP datagram helps to implement 'traceroute' utility?	**4**
c		List and describe the series of steps used in general network troubleshooting.	**8**