Sl. No.

C2-R4 : ADVANCED COMPUTER NETWORKS

NOTE :
1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same questions should be answered together and in the same sequence.**

Total Time : 3 Hours   **Total Marks : 100**

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1. (a) What is Asynchronous Transfer Mode (ATM) network ? Explain in brief.

(b) Explain how is congestion control handled in TCP.

(c) List out the merits and demerits of Distance Vector Routing Protocol.

(d) What are the advantages and disadvantages of Voice over Internet Protocol (VoIP) ?

(e) Compare and contrast IPv4 and IPv6.

(f) What are the benefits and limitations of Virtual Private Network (VPN) ?

(g) Explain the concept of Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA).   **(7x4)**

2. (a) Differentiate between Pure and Slotted ALOHA.

(b) What are the various services provided by TCP to the application layer ?   **(8+10)**

3. (a) Draw the complete diagram of ATM layers with the interconnection of different layers.

(b) Briefly explain each of the layers and their functionalities.

(c) Write down three different applications of ATM. Explain them in brief.   **(6+6+6)**

4. (a) Explain various IPv6 Address types and their scopes.

(b) Compare and contrast static routing technique dynamic one.   **(10+8)**

5. (a) What do you mean by Protocol Independent Multicast (PIM) ? How many variants of PIMs are there ?

(b) Explain in brief how do Leaky Bucket and Token Bucket Algorithms work.

(c) Compare Token Bucket with Leaky Bucket.   **(8+6+4)**

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6. (a) What are the advantages and disadvantages of Dedicated IP Addresses ?

   (b) What are the basic goals of Random Early Detection (RED) Algorithms used in Networking ? **(9+9)**

7. (a) For what purpose is Karn's Algorithm in context of TCP Protocol used for ? Is there any drawback associated with it ? Explain.

   (b) What is Remote Procedure Call (RPC) ? Write down the sequence of events occurred in an RPC.

   (c) What is a Real Time Streaming Protocol (RTSP) ? How does it work ? **(8+5+5)**

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