

Duration : 3 Hrs

Total Marks : 80

- N.B. : 1. Question No. 1 is Compulsory.  
2. Attempt **any three** questions, from remaining **five** questions.  
3. Figure to the right indicates full marks

- |      |                                                                                                                                                                |    |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Q.1. | A) Explain LAN, MAN and WAN.                                                                                                                                   | 5  |
|      | B) Compare various network topologies.                                                                                                                         | 5  |
|      | C) Explain the purpose of Flow control and Error Control from DLL perspective.                                                                                 | 5  |
|      | D) Explain the purpose of fragmentation of Packet and how it is done.                                                                                          | 5  |
| Q.2. | A) Explain OSI / ISO model with neat diagram and the functions of each layer.                                                                                  | 10 |
|      | B) Explain the functionality of Repeater , HUB , L2-Switch and Router.                                                                                         | 10 |
| Q.3. | A) Explain the need for subnetting? A company is granted the site address 201.70.64.0 (class C). The company needs six subnets. Design the subnets.            | 10 |
|      | B) What is difference between interior gateway and exterior gateway routing ? Explain the count to infinity problem of DVR and various solutions for the same. | 10 |
| Q.4. | A) What are Berkley socket primitives? Explain in brief.                                                                                                       | 10 |
|      | B) What is error detection and correction? Explain CRC with example.                                                                                           | 10 |
| Q.5. | A) What is congestion control ? Explain open loop and closed loop congestion control policies.                                                                 | 10 |
|      | B) Explain in brief –                                                                                                                                          | 10 |
|      | a) Telnet                                                                                                                                                      |    |
|      | b) TCP timers                                                                                                                                                  |    |
| Q.6. | Write Short Note on ( Any four )                                                                                                                               | 20 |
|      | (a) TCP segment header                                                                                                                                         |    |
|      | (b) IPV4 vs IPV6                                                                                                                                               |    |
|      | (c) Go back n ARQ                                                                                                                                              |    |
|      | (d) Design issues for various layers                                                                                                                           |    |
|      | (e) DNS                                                                                                                                                        |    |