

(Time: 2 ½ Hours)

[Total Marks: 60]

- N. B.: (1) All questions are compulsory.  
(2) Make suitable assumptions wherever necessary and state the assumptions made.  
(3) Answers to the same question must be written together.  
(4) Numbers to the right indicate marks.  
(5) Draw neat labeled diagrams wherever necessary.  
(6) Use of Non-programmable calculator is allowed.

1. Attempt any two of the following: 12

- Explain the concept of cloud computing and enlist its benefits.
- What is Quality of Service (QoS)? How many classes does quality of service policy support?
- Define Ethernet, Ethernet data rate and explain Wi-Fi Data Rates 4G/5G Cellular fifth Generation.
- Describe various congestion control techniques used in computer network.

2. Attempt any two of the following: 12

- What is Software Defined Network ? With the help of diagram, Explain SDN architecture.
- Distinguish between SDN data plane and open flow SDN data plane.
- Explain Southbound interface routing in detail.
- Write a note on Wireless information- centric networking CCN.

3. Attempt any two of the following: 12

- What is virtual network function? Explain the concept of NFV.
- Discuss the different types of functions performed by the data plane network devices.
- Write a short note on SND controller.
- List and explain the characteristics of Software-Defined Networking.

4. Attempt any two of the following: 12

- What are QoS/QoE Mapping Models? Describe Black-Box Media-Based QoS/QoE Mapping Model.
- Differentiate between QoE Versus QoS Service Monitoring.
- List and discuss factors influencing QoE.
- Draw diagram of QoE/QoS Layered Model with the Domains of Interest for the frameworks.

5. Attempt any two of the following: 12

- Define Software- defined Security. Describe NFV Security.
- What is RFID? Describe the working of RFID, Sensors and Actuators.
- Discuss cloud services as defined by NIST.
- Compare and contrast Traditional IT on-premise service and cloud service models with the help of a suitable diagram.