

**Duration: 3 hrs**

**[Marks: 80]**

- N.B. :** (1) Question No 1 is Compulsory.  
(2) Attempt any three questions out of the remaining five.  
(3) All questions carry equal marks.  
(4) Assume suitable data, if required, and state it clearly.

- 1 Attempt any **FOUR** [20]  
a Explain Open flow protocol.  
b Write a short note on IPTV.  
c Compare OSI and TCP/IP protocol suite.  
d Explain Virtual Private Network in brief with diagram.  
e What are the packet scheduling disciplines on the Internet?
- 2 a Explain DHCP packet format with diagram. [10]  
b Explain H.261 video compression standard. [10]
- 3 a What is a firewall? Explain packet filter and proxy firewall with necessary diagrams. [10]  
b Define IoT. Explain IoT protocol layer diagram with protocols at each layer. [10]
- 4 a What is Voice over IP? Explain messages and address formats of Session Initiation Protocol (SIP)? How a simple session of VOIP happen using SIP? [10]  
b Explain concepts of device provisioning, data collection, migration and configuration management with respect to network automation. [10]
- 5 a Explain MPEG 2 standard. [10]  
b Explain Differentiated Services (DS) with respect to Quality of Service (QoS). Explain DS field, per-hop behavior and traffic conditioner with respect to DS. [10]
- 6 a Describe each field of Real Time Transport Protocol (RTP) packet header format with diagram? [10]  
b Explain S/MIME protocol with respect to application layer security. [10]
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