

2009-UNIVERSITY OF PUNE
B.E INFORMATION TECHNOLOGY
COMPUTER NETWORKS

UNIT 1 - NETWORK LAYER

- 1) Describe OSI Network Model? Describe the use and residing protocols on each layer.
- 2) Describe important duties of Network Layer.
- 3) Describe the use of ARP and RARP protocol.
- 4) Write a short note on IP (Internet protocol).
- 5) Describe IP Header format?

- 6) Describe the concept of Fragmentation? Explain the use and process of fragmentation.
- 7) What are different IP Address Classes? Explain their range and use in networking?
- 8) Describe the use of special IP addresses?
- 9) Write a short note on subnetting?
- 10) Write a short note on supernetting?
- 11) Differentiate between IPv4 and IPv6 addresses?

- 12) Describe IPv6 header format?
- 13) Write a short note on "ICMP Protocol"?
- 14) Differentiate between intradomain and interdomain routing?
- 15) Describe various routing algorithms with an example?
- 16) Write a short note on "Mobile Hosts"?
- 17) Write a short note on "Tunneling"? How tunneling occurs with an example?

- 18) Explain RIP and OSPF protocol?
- 19) Explain BGP and IGMP Protocols?
- 20) Explain various congestion control mechanisms?
- 21) Differentiate between leaky bucket and token bucket algorithms?
- 22) Describe the use of firewall and explain their uses?

UNIT 2 - TRANSPORT LAYER

- 23) Explain important functions of transport Layer in OSI model?
- 24) Differentiate between TCP and UDP protocols?
- 25) Explain TCP and UDP header formats?
- 26) Explain various Quality of Service (QoS) parameters?
- 27) Explain multiplexing and demultiplexing concepts in Transport service primitives?
- 28) Write a short note on "RPC"?

- 29) Explain connection management mechanisms in Transport Layer? Describe various problems arising in connection management?
- 30) Explain the use and types of sockets with an example?
- 31) Explain various steps occurred in socket programming with an example?
- 32) Explain "Flow control and Buffering" concept with an example?

- 33) Explain "sliding window protocol"?
- 34) Explain various TCP transmission policies in detail?
- 35) Explain various TCP congestion control mechanisms?
- 36) Write a short note on "Wireless Communications"?

UNIT 3 - APPLICATION LAYER

- 37) Explain important functions of application Layer in OSI model?
- 38) Write a short note on “HTTP”?
- 39) Define “URL” with an example?
- 40) Write a short note on “HTML”?
- 41) Explain HTTP request and response message formats?
- 42) Explain Browser architecture with a neat diagram?

- 43) Explain various performance enhancements mechanism integrated with an browser architecture?
- 44) Write a short note on “FTP”?
- 45) Write a short note on “TFTP”?
- 46) Differentiate between FTP and TFTP”?
- 47) Explain the use and configuration of Proxy server?
- 48) Write a short note on “TELNET”?

- 49) Write a short note on “DNS”?
- 50) Explain domain concept and types of various domains?
- 51) Write a short note on “rLogin”?
- 52) Write a short note on “SMTP and MIME”?
- 53) Explain the use of BOOTP and DHCP server?
- 54) Write a short note on “WAP”?

UNIT 4 – MULTIMEDIA NETWORKING

- 55) Explain important features of Multimedia networking?
- 56) Explain FEC and interleaving concepts in Multimedia networking?
- 57) Explain the use of web and media server?
- 58) Write s short note on RTP?

- 59) Differentiate between RTP and RTCP? Explain their uses with an example?
- 60) Write a short note on SIP and H.323 protocols?
- 61) Write a short note on VOIP?
- 62) Explain various scheduling and policy mechanisms?

UNIT 5 – NETWORK CONFIGURATION AND MANAGEMENT

- 63) Explain Message Life Cycle?
- 64) Describe the use and process of analysis of loss and delay in networks?
- 65) Explain M/M/1, M/M/2 and M/M/m queue?

- 66) Write a short note on “SNMP”?
- 67) Explain various area of network management?

UNIT 6 – WIRELESS AND BROADBAND NETWORKS

- 68) Write a short note on
 - a. 802.11 Protocol Stack
 - b. Bluetooth
 - c. ATM
 - d. X.25
 - e. ISDN
 - f. Frame Relay
 - g. Explain Message Life Cycle?