

Advance Computer Network (315321)

MSBTE Diploma · K-Scheme · Model Question Paper — Set B

Time: 3 Hours**Max. Marks: 70****Instructions:**

1. All questions are compulsory.
2. Answer each next main question on a new page.
3. Illustrate your answers with neat sketches wherever necessary.
4. Figures to the right indicate full marks.
5. Assume suitable data, if necessary.
6. Use of non-programmable electronic pocket calculator is permissible.
7. Mobile phone, pager and any other electronic communication devices are not permissible in the examination hall.

Q.1 Attempt any FIVE of the following:**10**

- a) Define subnet mask. Write the default subnet masks of class A, B and C networks.
- b) State the purpose of queuing in routers.
- c) List any four well-known ports used with UDP along with their protocols.
- d) State the role of SMTP in an electronic mail system.
- e) State the purpose of the TTL and Protocol fields of the IPv4 header.
- f) State any four applications of Software Defined Networking (SDN).
- g) List the transmission modes of FTP.

Q.2 Attempt any THREE of the following:**12**

- a) Explain the working of TLS (Transport Layer Security) with a neat diagram. State any two applications.
- b) Define inter-domain routing. Explain path vector routing and any four functions of BGP.
- c) Describe the ARP packet format. State any two differences between ARP and RARP.
- d) Draw and explain the TCP segment structure.

Q.3 Attempt any THREE of the following:**12**

- a) Compare static routing and dynamic routing with respect to configuration, security, cost and routing protocols used.
- b) Explain TCP congestion control using slow start, congestion avoidance and congestion detection. Draw the graph of congestion window for ssthresh = 16 with a time-out in the 10th round.

- c) Explain IMAP4 and compare it with POP3. (Any four points)
- d) Explain the role of RTSP in streaming media with a neat diagram.

Q.4 Attempt any THREE of the following:

12

- a) What is supernetting? Combine the class C networks 200.10.16.0, 200.10.17.0, 200.10.18.0 and 200.10.19.0 into a supernet and find the supernet mask and address range.
- b) Explain the components of a router with a neat diagram.
- c) Describe the HTTP request and response message formats.
- d) Explain edge computing with respect to its components and any three challenges.
- e) Describe flow control and error control in SCTP.

Q.5 Attempt any TWO of the following:

12

- a) Draw the IPv6 base header and explain each field. Name any two IPv6 extension headers.
- b) Explain wireless networks with respect to: i) Types ii) Working iii) Benefits.
- c) Explain DNS with respect to: i) Domain name space ii) Types of domains iii) Name resolution (with diagram).

Q.6 Attempt any TWO of the following:

12

- a) For the IP address 150.80.200.45 find: i) Class ii) Default mask iii) Network address and host id iv) First and last usable host address v) Broadcast address vi) If this network is divided into 8 equal subnets, find the subnet mask and the subnet address to which 150.80.200.45 belongs.
- b) Compare OSPF and RIP. (Any six points) Justify why OSPF is preferred in large networks.
- c) Explain the working of PGP at the sender and the receiver with neat diagrams.

Note: This is a **model question paper prepared by Ananda Technologies** only for practice and exam preparation, based on the pattern of previous MSBTE question papers and the K-scheme syllabus. It is **not an official MSBTE paper**, and it does **not** mean that these questions will come in the exam. Answers follow standard textbook points; marks shown are indicative. Free for students — anandatechnologies.in