C 6154 (Pages 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2010

Computer Science

CS/IT 04 603—COMPUTER NETWORKS

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Answer all *questions.*

1. (a) Distinguish between circuit switching and packet switching.

(b) Five devices are arranged in token bus topology. If a connection fails, discuss the consequences.

(c) Justify that the B–ISDN reference model indeed achieves high speed in networks.

(d) Explain in detail rate based explicit congestion avoidance algorithms in Frame Relay protocol.

(e) Explain the working of distance vector protocol.

(f) Why did the ISO OSI protocol stack fail ?

(g) List the advantages of layering as seen in the TCP/IP architecture.

(h) Explain the significance of each field in IP header.

(8 × 5 = 40 marks)

2. (a) (i) Explain the different ways by which wireless data can be propagated.

(8 marks)

(ii) Differentiate Token Holding Time (THT) and Token Rotation Time (TRT).

(4 marks)

(iii) What is the significance of PAD field in ethernet frame ?

(3 marks)

Or

(b) (i) Explain in detail the operation of token ring medium access control protocol.

(7 marks)

(ii) Write notes on slotted ring.

(4 marks)

(iii) If a token ring is prioritized, what is the longest time a station may have to wait before it can claim a token ?

(4 marks)

Turn over

3. (a) (i) How many bytes of the ATM payload does the AALI header use ? (3 marks)

(ii) Explain the features of the four AAL types. (8 marks)

(iii) Why does SONET use pointers in its header to point to a synchronous payload envelop ? (4 marks)

Or

(b) (i) What are the drawbacks of X.25 protocol ? What features of Frame Relay overcomes the drawback of X.25 ? (8 marks)

(ii) Write the frame structure of SONET. (7 marks)

4. (a) Write notes on :

(i) Repeaters. (ii) Hubs.

(iii) Bridges. (iv) Routers.

(v) Transparent Bridge. (15 marks)

Or

(b) (i) With a neat state transition diagram explain the functions of TCP. (8 marks)

(ii) Explain the role of session layer. (7 marks)

5. (a) (i) List the steps in ARP and RARP Protocol. (7 marks)

(ii) What is the minimum and maximum size of an ICMP packet ? (4 marks)

(iii) A datagram is carrying 1024 bytes of data. If there is no option information, what is the value of the header length field ? What is the value of the total-length field ? (4 marks)

Or

(b) (i) What is the advantage of a hierarchical name space over a flat name space ? (5 marks)

(ii) Explain the format of an email. (7 marks)

(iii) What is an URL ? Why do we need URL's ? (3 marks)

[4 × 15 = 60 marks)