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RF-4828

M. C. A. (Sem. IV) Examination

April / May – 2010

403 : Data Communication & Network Protocols

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दृशायेव निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी.
 Fillup strictly the details of signs on your answer book.

Name of the Examination :

Name of the Subject :

Subject Code No. : Section No. (1, 2,.....):

Seat No. :

Student's Signature

1 Attempt any 2 out of following 3:- 14

- (a) Draw TCP/IP model and describe its upper two layers.
- (b) On what kind of links we may use SLIP/PPP? Compare their frame formats and comment on their merits and demerits.
- (c) When does an IP datagram need to be fragmented? Explain the fragmentation in detail.

2 Attempt any 2 out of following 3:- 14

- (a) An organization is granted the block 16.0.0.0/8. The administrator wants to create 500 fixed-length subnets.
 - (1) Find the subnet mask
 - (2) Find the number of address in each subnet.
 - (3) Find the first and the last address in the last subnet.
- (b) Which part of IP header is compulsory and which part is optional? Is options part fixed size or variable size? Show the general options format and describe strict source route and loose source route options in detail.
- (c) What is the use of ARP? Explain working with help of a diagram.

- 3** Attempt any **2** out of following 3:- **14**
- (a) Enlist various purpose of ICMP. Explain the query messages of ICMP in detail.
 - (b) Explain private and special IP addresses.
 - (c) Explain with proper example forwarding in classless addressing.
- 4** Attempt any **2** out of following 3:- **14**
- (a) Explain DNS query and response format.
 - (b) What are the similarities and differences between TCP and UDP? List uses of UDP. What are advantages and disadvantages of UDP over TCP? Why pseudo header is used in UDP? Which feature of UDP is not supported in TCP? Give three examples of protocols that user UDP.
 - (c) Explain in brief : BOOTP, FTP, TFTP, SMTP, IGPM.
- 5** Attempt any **2** out of following 3:- **14**
- (a) Give the format of TCP segment and describe its fields.
 - (b) Explain flow control mechanism in TCP,
 - (c) When TCP provides good flow control mechanism, why congestion control is additionally provided? Explain different strategies followed by TCP for congestion control.
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