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**Question Paper Code : Q 2283**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009.

Sixth Semester

Information Technology

IT 1351 — NETWORK PROGRAMMING AND MANAGEMENT

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the structure of socket address (`sock_addr`).
2. How is `bind()` system call used?
3. Write a client-end code snippet to check if the server has crashed.
4. Assume you are given a server code and a client code for a single client echo server application. What modifications will you make to upgrade the given application into a single server multiple client application?
5. Give the syntax for `gethostbyname()` system call.
6. Give the socket options for IP and ICMP.
7. Describe the `fork()` system call.
8. What are raw sockets?
9. What are the advanced features available in SNMPV2?
10. How does an SNMP agent communicate with an SNMP manager?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain connection establishment in TCP. (8)  
(ii) How is fragmentation done at IP layer? (8)

Or

- (b) (i) Explain the following system calls with examples : connect( ), listen( ), accept( ), write( ). (8)  
(ii) Explain the operation of iterative servers and concurrent servers, from programming point of view. (8)

12. (a) Write a client/server socket program to support multiple clients for the following case : each client sends a text message to the server for encryption (or decryption). The server responds with the appropriate response. (16)

Or

- (b) Write a client server socket program to emulate http request/response. (16)

13. (a) Explain the organisation of Domain Name System. (16)

Or

- (b) Explain and write code snippets to illustrate the use of getservbyname() and getservbyadr(). (16)

14. (a) (i) Explain the ping operation. (8)  
(ii) Write a client/server program to emulate ping. (8)

Or

- (b) (i) What is the purpose of trace route? (8)  
(ii) Describe the system calls related to multithreading. (8)

15. (a) Explain the messages used in SNMPV1 with their syntax.

Or

- (b) (i) Describe the need for RMON in LAN environments. (6)  
(ii) Enumerate and describe the features offered in SNMPV3. (10)