



# P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Sixth Semester, B.E. - Computer Science and Engineering**

**Semester End Examination; May/June - 2018**

**Client Server Programming**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

## UNIT - I

- 1 a. Differentiate between stateless and statefull servers and illustrate with the scenario where and how file server maintain state information? 10
- b. Suppose a client need to communicate with the server in the different network over the internet, what type of service an application programmer chooses? Why? 4
- c. Analyze the fundamental motivation for client server paradigm over peer-to-peer model. How TCP/IP provides solution for this? 6
- 2 a. Analyze the need of concurrency in multi user system, how does it achieves concurrency? 10
- b. Analyze the complexity involved in designing server application. 10

## UNIT - II

- 3 a. Illustrate how conceptual operating system data structure gets filled after calling various system calls with example calls by applying the concept of file descriptor table. 10
- b. Analyze the issue to be considered while developing an efficient client. How do you address those issues? 10
- 4 a. Suppose you are designing a client to access the FTP server which changes its location very frequently, illustrate the possible ways of making the client program to access the server more general and dependent of the computing environment. 8
- b. Describe the generic address structure and write the *sockaddr* structure for the following data; Given : 6
- Host address: 192.163.2.72 and Port no: 21.
- c. Analyze the need and the operation of partial close in TCP communication. 6

## UNIT - III

- 5 a. Develop appropriate client software to access the DAYTIME service, justify the type of client and socket interfaces you selected. 10
- b. Develop a TCP client that accesses the ECHO server. 10
- 6 a. Develop appropriate client software to access the required file from FTP server. 10
- b. Analyze the issue to be considered while developing an efficient server. Illustrate the modules to handle those issues. 10

**UNIT - IV**

- 7 a. Develop an algorithm to provide apparent concurrency. How do you achieve it? Explain with example. 10
- b. Illustrate different conditions and different types of servers with which deadlock occurs in detail. 10
- 8 a. Illustrate apparent concurrency explaining the reason for implementing apparent concurrency with example. 10
- b. Design and develop a server to provide TIME service to the requested client. 10

**UNIT - V**

9. Consider an education trust in Mandya running three institutions under its control at various places. Complete information of all the employees of all the institutions is stored in a server. Design a client software through which manager of the trust can get the specific employee file from the server running at remote host. Justify the type of server, socket interfaces you are selecting for designing. Assume appropriate data required. 20
10. Suppose there is a group of 10 people of different branches working in a team to solve the assigned problem. They were also instructed to design a server application to exchange messages about the project within the LAN .So, Design and Develop a;
- i) Server to provide a chatting service to this team/group for exchanging messages among the group/team members 20
- ii) Client to access this chatting service
- Selecting appropriate client, server and APIs. Justify your selection. Assume appropriate data required.

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