



RM-7703

**B. E. - IV (Sem. VIII) (Computer Engg.) Examination**  
**May / June - 2010**  
**Distributed Programming Environment**  
**(Elective-II)**

Time : 3 Hours]

[Total Marks : 100

**Instruction :**

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

Name of the Examination :  
**B. E. - 4 (Sem. 8) (Computer Engg.)**

Name of the Subject :  
**Distributed Programming Environment (Elective-2)**

Subject Code No. : **7 7 0 3** Section No. (1, 2,.....): **1&2**

Seat No. :

Student's Signature

**SECTION-I**

- 1 (a) Answer the following : **10**
- (1) What do you mean by wrapper function ? **1**
  - (2) Define : Message queue. **1**
  - (3) Write a function to create a message queue ? **2**
  - (4) Enlist functions for IPC operation for shared memory. **1**
  - (5) \_\_\_\_\_ sometimes called named pipes. **1**
  - (6) Explain mkfifo( ) function. **3**
  - (7) Define distributed system. **1**
- (b) Answer the following : **8**
- (1) Write difference between PIPE and FIFO.
  - (2) Differentiate between iterative and concurrent server.
- 2 Answer the following : (any two) **16**
- (1) Write a simple client server program using message queue that work as follows :
- CLIENT  
User will send date of birth in the format DD-MM-YY and waits for server reply from server. When the reply is received it will print those results.
- SERVER  
It will wait until data are received from CLIENT. When date of birth is received server will calculate age and will return the age to the CLIENT.

- (2) Write a program using pipe for the given UNIX command : Who/Wc.
- (3) What is the use of specification file in RPC ? Is this specification file compulsory to write ? Justify your answer. Also explain the job of rpcgen.

**3** Answer the following : (any four) **16**

(1) Define semaphore. Differentiate between binary and counter semaphore.

(2) Explain Struct sembuf [285]

```

{
    Ushort sem_num;
    Short sem_op;
    Short sem_flg;
}

```

Explain each member of this structure with its all possible values and its meaning.

- (3) What is ORB ? Explain in brief.
- (4) Explain message queue structure and its importance.
- (5) Discuss applications of Agreement protocols.

## SECTION - II

**4** (a) Answer the following : **10**

- (1) Explain SYN\_RCVD state. **1**
- (2) Explain use of bzero and bcopy. **2**
- (3) Compare AF\_INET and PF\_INET options of socket ( ). **2**
- (4) Explain soft error. **1**
- (5) Explain the importance of backlog argument in listen ( ). **1**
- (6) Explain importance of syslogd Daemon and priority field of syslog ( ). **2**
- (7) Explain MSG\_DONTROUTE flag in recv ( ). **1**

(b) Write a daemon program, which returns the Date in form dd:mm:yyyy: hrs:min:sec **10**

- 5 Attempt the following : 15
- (a) Explain importance of select( ) and poll( ). Write Echo server program using poll( ). 8
  - (b) Define socket options. Explain the use of SO\_LINGER and SO\_OOBINLINE socket option. 7

**OR**

- (b) Differentiate between UDP socket with and without connect( ). 7
- 6 Attempt any **three** of the following : 15
- (1) Enlist and explain steps to create a daemon process.
  - (2) Explain connection abort before accept function.
  - (3) Explain the terms incomplete and complete connection queues and mention in which state the sockets can be during they in such queues using figure.
  - (4) Write a program to demonstrate getservbyname( ), getservbyport(), and gethostname(), which prints all the information the system calls provide.

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