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BICS-037

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DIPLOMA (COMPUTER SCIENCE) (DCSVI)

Term-End Examination

June, 2013

BICS-037 : OPERATING SYSTEM

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt **any five** questions. Question No. **1** is **compulsory**. **All** question carry **equal** marks.*

1. Choose the correct answer : **7x2=14**

   (a) The part of machine level Instruction, which tells the central processor what has to be done is called :

   (i) Operation code

   (ii) Address

   (iii) Flip-Flop

   (iv) None of the above

   (b) An OS in a program or a group of programs that :

   (i) Helps in checking the spelling of word.

   (ii) Maintain the relationship in Database.

   (iii) Manages the resources of the computer.

   (iv) None of above.

(c) Shell is the exclusive features of :

(i) DOS

(ii) UNIX

(iii) System software

(iv) Application software

(d) Which Scheduling Policy is most suitable for a time-shared operating system ?

(i) Shortest Job First

(ii) First Come First Serve

(iii) Round Robin

(iv) None of above

(e) "Throughput" of a system is :

(i) Number of programs processed by the system in per unit time

(ii) Number of times the program is invoked by the system

(iii) Number of requests made to a program by the system

(iv) None of above

(f) A computer cannot "boot" if it does not have the compiler. (True/False)

(g) Interprocess communication allows processes to synchronize activity. (True/False)

2. (a) What is an operating system ? Explain various functions of operating system. 7

(b) Explain different types of operating systems. 7

3. (a) What are the different states of a process ? How does a process change from one state to another ? 7

(b) What are Process Control Blocks (PCB) ? Why PCB's are used by operating system ? Explain the structure of PCB. 7

4. (a) Discuss the common performance measures and optimization criteria that the schedulers use, in attempting to maximize system performance. 7

(b) Differentiate between preemptive and Non-preemptive scheduling. 7

5. (a) Explain the producer-consumer problem with a bounded buffer in concurrent programming. 7

(b) Write the concurrent reader's and writer's problem. Write an algorithm to solve it. 7

6. (a) Explain the following partition allocation strategies : 7

(i) First Fit

(ii) Best Fit

(iii) Worst Fit

(b) Explain the Dynamic Partitioning Memory allocation scheme. 7

7. (a) Explain **any two** disk Scheduling Algorithm. Why the SCAN scheduling is also called Elevator Algorithm ? 7

(b) Explain the structure of UNIX operating system. 7

8. Write short notes on ***any four*** of the following : **3.5x4=14**

(a) AWK programming

(b) Cryptography

(c) Secondary Storage Management

(d) Computer security

(e) File Directories

(f) Deadlock.