No. of Printed Pages : 4

BICS-037

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

00395

Term-End Examination

December, 2014

BICS-037 : OPERATING SYSTEM

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions in all. Question no. **1** is **compulsory**. All questions carry equal marks.*

1. Choose the correct answer : *7×2=14*

(a) Interval between the time of submission and completion of the job is called

(i) Waiting time

(ii) Turnaround time

(iii) Throughput

(iv) Response time

(b) An Assembler is

(i) Programming language dependent

(ii) Syntax dependent

(iii) Machine dependent

(iv) Data dependent

(c) Which of the following loaders is executed when a system is first turned on or restarted ?

(i) Boot loader

(ii) Compile and Go loader

(iii) Bootstrap loader

(iv) Relating loader

(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) Elevator

(e) Process is

(i) a program in high level language kept on disk

(ii) the contents of main memory

(iii) a program in execution

(iv) a job in secondary memory

(f) To avoid race condition, the maximum number of processes that may be simultaneously inside the critical section is

(i) Zero

(ii) One

(iii) Two

(iv) None of the above

(g) Kernel is the feature of

(i) UNIX

(ii) DOS

(iii) System software

(iv) Application software

2. (a) What is an operating system ? Write down the steps of memory management and process management functions of an operating system. *7*

(b) Explain device management techniques. *7*

3. (a) Show how a monitor can be implemented with semaphores. *7*

(b) Explain Dekker's solution to mutual exclusion problem with an example. *7*

4. What is scheduling ? Describe scheduling mechanism in detail. *14*

5. Describe the following : *6+4+4=14*

(a) Semaphores

(b) Interprocess Communication

(c) Synchronization

6. What is deadlock ? Describe deadlock detection and prevention. *14*

7. (a) Describe the implementation of paging and segmentation with a suitable example. 7

(b) Compare the page replacement algorithm : 7
(i) FIFO
(ii) LRU

8. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

(a) UNIX and AWK Programming

(b) Computer Security and Protection

(c) File Organization

(d) Disk Scheduling

(e) RAID

(f) I/O management