No. of Printed Pages : 4 **BICS-037**

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

Term-End Examination

June, 2015

00665

BICS-037 : OPERATING SYSTEM

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt **five** questions in all. Question no. **1** is **compulsory**. Each question carries equal marks.*

1. Choose the correct answer from the given four alternatives : *7×2=14*

(a) Operating System is a/an

(i) Interface between hardware and the user

(ii) Resource manager for the system

(iii) Both (i) and (ii)

(iv) None of the above

(b) Which of the following is ***not*** an Operating System ?

(i) DOS

(ii) NTFS

(iii) Ubuntu

(iv) Android

(c) Absence of a needed page from the memory leads to a situation called

(i) Faulty page

(ii) Missing page

(iii) Page fault

(iv) None of the above

(d) Which of the following is ***not*** a scheduling technique ?

(i) FCFS

(ii) Round Robin

(iii) SJF

(iv) SSTF

(e) On an Input and Output request the process moves from running state to

(i) Ready state

(ii) Hold state

(iii) Wait state

(iv) Terminate state

(f) Which of the following is ***not*** an allocation strategy ?

(i) Worst fit

(ii) Mid fit

(iii) Best fit

(iv) First fit

(g) Techniques for handling deadlocks involve

(i) Deadlock Detection

(ii) Deadlock Breaking

(iii) Deadlock Prevention

(iv) Deadlock Avoidance

2. (a) With the help of a suitable diagram, explain the architecture and goals of an Operating System. 7

(b) What do you understand by time sharing systems ? Explain with the help of an example. Differentiate between distributed and real-time Operating System. 7

3. (a) Explain the principle of Concurrency. Also describe the classical problem of synchronization. 7

(b) Differentiate between deadlock prevention and deadlock avoidance in detail. Also describe the priority scheduling technique, using suitable examples. 7

4. (a) What do you understand by Memory Management ? Why do we need it ? Also explain the concept of Paging. 7

(b) What is Memory Partitioning ? Why is it necessary ? Explain the various memory partitioning techniques using examples. 7

5. Explain the following in detail : $4 \times 3\frac{1}{2} = 14$

(a) FCFS Disk Scheduling Technique

(b) SCAN

(c) CSCAN

(d) Input and Output Functions

6. (a) What is File Organisation ? How is it performed by operating systems ? Explain using examples. 7

(b) Explain the concept of free space management using examples. 7

7. (a) What are the various security threats encountered by an Operating System ? 7

(b) Explain the concept of Cryptography in detail, with suitable examples. 7

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

(a) Object Server Model

(b) Dining Philosophers Problem

(c) Multiprocessor Scheduling

(d) File Sharing

(e) Shell Programming