

**DIPLOMA - VIEP - COMPUTER SCIENCE AND  
ENGINEERING (DCSVI)**

**Term-End Examination**

00527

**December, 2017**

**BICS-037 : OPERATING SYSTEM**

*Time : 2 hours*

*Maximum Marks : 70*

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

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1. Choose the correct answer from the given four alternatives :  $7 \times 2 = 14$
- (a) Direct method of deadlock prevention is to prevent the occurrence of
- (i) Mutual exclusion
  - (ii) Hold and wait
  - (iii) Circular wait
  - (iv) No pre-emption
- (b) \_\_\_\_\_ is required to move the disk arm to the required track.
- (i) Seek time
  - (ii) Latency time
  - (iii) Access time
  - (iv) None of the above

- (c) A range of memory addresses available to a process is
  - (i) Address space
  - (ii) Real address
  - (iii) Virtual address
  - (iv) None of the above
  
- (d) \_\_\_\_\_ policy replaces the page in memory that has not been referenced for the longest time.
  - (i) LRU
  - (ii) FIFO
  - (iii) Optimal
  - (iv) Clock
  
- (e) RAID stands for
  - (i) Redundant Array of Independent Disks
  - (ii) Redundant Array of Important Disks
  - (iii) Redundant Array of Internet Disks
  - (iv) Redundant Array of Intensity Disks
  
- (f) A pipe is a
  - (i) FIFO
  - (ii) LIFO
  - (iii) LILO
  - (iv) FILO

- (g) Only one process may use a resource at a time. This condition is called
- (i) Mutual exclusion
  - (ii) Hold and wait
  - (iii) No pre-emption
  - (iv) Stack
2. (a) Explain various types of operating systems briefly. 7
- (b) Describe multiprogramming and multitasking briefly. 7
3. (a) What is a Kernel ? Explain symmetric multiprocessing. 7
- (b) What is a Deadlock ? Explain deadlock detection briefly. 7
4. (a) Discuss different types of scheduling. 7
- (b) What are the classical problems of synchronization ? 7
5. (a) Compare and contrast SCAN and C-SCAN. 7
- (b) Explain Free Space Management. 7
6. (a) Discuss about Swapping and Paging. 7
- (b) Explain various memory allocation strategies. 7

7. (a) Explain the organization of I/O functions. 7
- (b) Discuss about RAID and disk caches briefly. 7
8. Write short notes on any *two* of the following :  $2 \times 7 = 14$
- (a) Batch Processing
- (b) Pre-emptive Scheduling
- (c) Cryptography
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