



**DG-3180**  
**Third Year B. Sc. (Sem. V) (Computer Science)**  
**Examination**  
**March / April - 2016**  
**Paper - 506 : Operating System - I**

Time : 2 Hours]

[Total Marks : 50

**Instruction :**

<p>નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : T. Y. B. Sc. (Sem. 5) (Computer Science)</p> <p>Name of the Subject : P. 506 : OPERATING SYSTEM - 1</p> <p>Subject Code No. : 3 1 8 0 Section No. (1, 2,.....) : Nil</p>	<p>Seat No. : □ □ □ □ □ □</p> <div style="border: 1px solid black; border-radius: 15px; height: 60px; display: flex; align-items: center; justify-content: center; margin-top: 10px;">Student's Signature</div>
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1 Answer the following questions in short : 14

- (1) Differentiate single user and multi user o.s. give example of each.
- (2) Define process and job scheduling.
- (3) List major activities of an operating system in regards to process management.
- (4) Define semaphores.
- (5) What is multitasking o.s ? List multitasking o.s.
- (6) What do you mean by co-operating process ?
- (7) List process management functions.

2 Write answers for the followings : 6+6

- (1) Define operating system. Also explain its goal.
- (2) Write detail note on evolution of operating system.

**OR**

- (1) Explain priority scheduling techniques with various issues like aging in detail.
- (2) Differentiate contiguous versus non-contiguous memory management scheme.

- 3** Write answers for the followings : **6+6**
- (1) What do you understand by critical section problem ? Discuss Paterson's policy to solve the critical section problem.
  - (2) Explain banker's algorithm and its advantages.

**OR**

- (1) Consider 1,2,3,4,5 8,3,6,0,1,2,3,4,8,3,6,2,5,3 how many page faults will occur for the following replacement ? Consider the memory is empty initially and memory is having 3 frames discuss FIFO page replacement algorithm and Optimal page replacement algorithm.
- (2) Write detail note on multilevel paging techniques.

- 4** Write answers for the followings : **6+6**
- (1) Explain demand paging in detail. Also write its advantages and disadvantages.
  - (2) List four necessary conditions to occur deadlock. Explain how can you prevent deadlock by breaking any one ? (Exclude mutual exclusion).

**OR**

- (1) What is semaphore ? Explain how does it solve the critical section problem.
- (2) Explain segmentation with demand paging.

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