



**UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)**  
**उत्तराखण्ड मुक्त विश्वविद्यालय, हल्द्वानी (नैनीताल)**

**BCA-16/BCA-11 2<sup>ND</sup> YEAR 3<sup>RD</sup> SEMESTER ASSIGNMENT**

*Last Date of Submission: 30/04/2017*

**Course Title:** Operating System

**Course Code:** BCA-10

**Year:** 2016-17

**Maximum Marks:** 30/40

**Section 'A' contains 08 short answer type questions of 4/5 marks each. Learners are required to answer 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.**

1. What is thread? Explain any four benefits of multithreaded program.
2. Explain following :
  - a. Multilevel queue scheduling
  - b. Semaphores
3. Define following terms:
  - a. Buffering
  - b. Spooling
4. Give any two differences between logical and physical addresses.
5. Describe following allocation algorithm
  - a. First fit
  - b. Best fit
6. Explain critical selection problem.
7. What are the three main purposes of an operating system?
8. Define Process Control block. Explain with diagram.

**Section 'B' contains 04 long answer-type questions of 7/10 marks each. Learners are required to answers 02 questions only.**

1. What is an operating system? Explain client-server systems and multi-processor operating systems.
2. Explain the CPU-I/O burst cycle with diagram. Describe Round-Robin Scheduling algorithm.
3. What is page replacement scheme? Explain with diagram. Define LRU (least-recently used) algorithm with an example.
4. Is it possible to have a necessarily deadlock condition in a resource allocation graph with a cycle. Explain your answer. Define Banker's algorithm.

