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**BCA (Sem. - 4<sup>th</sup>)**  
**OPERATING SYSTEMS**  
**SUBJECT CODE : BC - 404**  
**Paper ID : [B0218]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours**

**Maximum Marks : 60**

**Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.

**Section - A**

**Q1)**

**(10 × 2 = 20)**

- a) What do you mean by long term dispatcher?
- b) What is the principal advantage of multitasking?
- c) Differentiate between a program and a process.
- d) Which do you mean by deadlock detection?
- e) Define the concept of external fragmentation.
- f) What is compaction and why it is used?
- g) What is the difference between local page replacement and global page replacement?
- h) What do you mean by inter-process communication?
- i) What is the purpose of system program?
- j) List two main functions of an operating system?

**Section - B**

**(4 × 10 = 40)**

**Q2)** What is Deadlock? List and explain four necessary conditions for dead lock to occur?

**Q3)** List and explain different classifications of operating systems?

- Q4)** (a) Explain Dining Philosopher problem in process synchronization.  
(b) List and explain different states of a process?
- Q5)** (a) What do you mean by memory management? Differentiate between physical and logical memory?  
(b) Explain the concept of virtual memory in detail?
- Q6)** (a) What is the need of file management? List different types of access methods available in files?  
(b) List and explain different types of allocation methods available?
- Q7)** Write short note on the following :
- (a) Authentication.  
(b) Security threats.

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