



كلية تكنولوجيا الصناعة والطاقة

Information Technology  
Department  
2<sup>nd</sup> Year



جامعة برج العرب التكنولوجية  
BORG AL ARAB TECHNOLOGICAL UNIVERSITY

جامعة برج العرب  
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Course: Operating System Semester: 1 <sup>st</sup> term 2025/2026.	Lecturers: Dr. Ghada Fathy
<i>Assignment 2</i>	

### Q 1: Completion Questions

1. The program that runs at system startup and loads the operating system is called the \_\_\_\_\_.
2. The bootstrap program is usually stored in \_\_\_\_\_ memory.
3. The main memory can be viewed as a cache for \_\_\_\_\_ storage.
4. In a multiprocessor system, all processors share the same \_\_\_\_\_.
5. An operating system is described as \_\_\_\_\_-driven because it responds to signals and events during execution.
6. Caching improves performance by temporarily storing \_\_\_\_\_ data in faster memory.
7. In clustering, the type where all nodes are active and share the workload is called \_\_\_\_\_ clustering.

### Q2: Comparison Questions

1. Compare **hardware interrupts** and **software interrupts**.
2. Differentiate between **Synchronous I/O** and **Asynchronous I/O**.
3. Compare **Asymmetric Multiprocessing (AMP)** and **Symmetric Multiprocessing (SMP)**.



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### Q3 – Short Answer Questions

1. Explain why ROM is used to store the bootstrap program.
2. What is the main function of Direct Memory Access (DMA)?
3. What is a distributed lock manager (DLM), and why is it used in clustered systems?

### Q4 – Applied and Conceptual Questions

1. In a clustered system, one node fails during a database transaction. Explain what happens next in symmetric clustering.
2. Suppose a user opens a file while another process is performing I/O. How does asynchronous I/O improve system performance?

Name:

ID:



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Group:

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Model Answer

### Part 1: Multiple Choice Questions

1.	
2.	
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10.	

### Part 2: True / False Questions

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