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**Assignment 1**

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**Submitted to:**

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Q1) What are the main purposes of an operating system?

Ans It is a resource manager.

1. Manage the computer's resources, such as the central processing unit, memory, disk drives, printers and file .
2. Establish a user interface.
3. Execute and provide services for applications software.
4. Control over system performance and Security
5. Its Error detecting aids
6. Coordination between other software and users

Q2 What is the main difficulty that a programmer must overcome in writing an

operating system for a real-time environment?

Ans There are hard deadlines that must be met. For example, if a car is moving down an assembly line, certain actions must take place at certain instants of time. If, for example, a welding robot welds too early or too late, the car will be ruined.

Q3 What is the main advantage of the layered approach to system design? What

are the disadvantages of using the layered approach?

Ans This approach breaks up the operating system into 6 layers.

**Layer Function**

5 The operator

4 User programs

3 Input/output management

2 Operator-process communication

1 Memory and drum management

0 Processor allocation and multiprogramming

**Advantages**

1. This allows implementers to change the inner workings, and increases modularity.

2.  Developers have more freedom to change the inner workings of the routines.

3. The main *advantage* is simplicity of construction and debugging.

**Disadvantages**

1. The main difficulty is defining the various layers.

2. The main disadvantage is that the OS tends to be less efficient than other implementations.

Q4

1) Write down the names of all Parent Processes in above Diagram.

Ans 48,70,30,65,90,20,32,67,98

2) Write down the siblings processes / parallel processes / concurrent processes in above diagram.

Ans 48 and 70 , 20 and 32 , 65 and 90 ,15 and 25 ,31 and 35 ,66 and 69 ,94 and 99.

3) Write down the Predecessor and Successor of each process by making a Process Table.

4) Named the Root Process in this PND

Ans 50

5) Please write down the justification about the PID and UID with reference to this PND

Ans