

## National University of Computer and Emerging Sciences, Lahore Campus



Course: Operating Systems  
 Program: BS(Computer Science)  
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 Section: 6A  
 Exam: Quiz 1

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 Total Marks: 10  
 Weight Page(s): 2

Answer the questions in the given available space. CLO 1 [2 + 2 + 2 + 2 + 2 = 10 Marks]

Q:1 When an interrupt occurs then how CPU manages to handle that interrupt?

2 interrupt is a signal that demands CPU attention to solve any OS function/task. When an interrupt occurs CPU saves the current instruction address and executes the ISR (interrupt service routine). ISR checks the interrupt type and executes the interrupt. CPU then continues from where it has stopped.

Q:2 How does Direct Memory Access (DMA) improve system performance?

2 DMA is a technique in which hardware device directly interacts with the memory without any involvement of CPU. So since there is no involvement of CPU it has less workload and hence less time is consumed in data transfer.

Q:3 What is the role of a device driver in managing the interaction between the operating system and a hardware device?

2 device driver is a software program that helps the communication between OS and device controller. For e.g. device controller is connected to each device. When a read/write operation comes it translates it so that the controller can understand.

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Q:4 What is the main purpose of the Device Status Table (DST) in an operating system? What kind of information does a Device Status Table typically?

Device Status Table holds the status of the device e.g. if it is idle or not (functioning or not functioning).

printer  
status: busy

keyboard  
status: idle

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Q:5 Why use APIs (Application Programming Interfaces) rather than direct system calls?

System calls provides an interface between user and OS. Its purpose is to provide allow program to request services e.g. file handling. API make the usage of system calls easier.

e.g. Win 32 API (for windows).

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