Question 1: Write two differences between WPF and DirectX?

Answer:

They are two different things. WPF is made for designers to create vector-based applications using XML and managed code. It uses DirectX as the rendering engine under the covers.

DirectX is a set of APIs that abstracts access to modern graphics rendering hardware, as well as other technologies such as sound or input devices.

WPF is not designed for any significant game programming, other than, say, a simple card came. Nor is it designed with the intention of allowing you to create a 3D user interface into your DirectX game.

Question 2: Assume that three I/O devices are connected to a 32-bit, 10 MIPS CPU. The first device is a hard drive with a maximum transfer rate of 1MB/sec. It has a 32-bit bus. The second device is a floppy drive with a transfer rate of 25KB/sec over a 16-bit bus, and the third device is a keyboard that must be polled thirty times per second. Assuming that the polling operation requires 20 instructions for each I/O device, determine the percentage of CPU time required to poll each device.

Question 3: Consider a memory system having the following specifications. Find its total cost and cost per byte of memory.

Memory type	Total bytes	Cost per byte
SRAM	768 KB	40$ per MB
DRAM	512 MB	4$ per MB
Disk	4 GB	5$ per GB

Question 4: Consider two programs having three types of instructions given as follows: Compare both the programs for the following parameters:

1. Instruction count
2. Speed of execution

Question 5: Control Unit Functionality mention only three

Question 6: Difference between Memory Address Register and Memory Buffer Register

Question 7: Given below are the various fields of an SRC instruction register.
operation code field : op<4..0>
target register field : ra<4..0>
operand, address index, or branch target register : rb<4..0>
second operand, conditional test, or shift count register: rc<4..0>
Rewrite these various fields of an SRC instruction, using the RTL.

Answer:

1. op<4..0>: = IR<31..27>; operation code field
2. ra<4..0>: = IR<26..22>; target register field
3. rb<4..0>: = IR<21..17>; operand, address index
4. rc<4..0>: = IR<16..12>; second operand, conditional test

(Page 67)