

Started on	Wednesday, 16 September 2020, 3:12 PM
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Completed on	Wednesday, 16 September 2020, 3:23 PM
Time taken	11 mins 47 secs
Grade	8.00 out of 8.00 (100%)

Question **1**
Complete
Mark 1.00 out of 1.00

What is the output that results from the following code fragment?

```
double x = 2.0, y = 3.0;

__asm fld x

__asm fld y

__asm fmul st(0), st(1)

__asm faddp st(1), st(0)

__asm fstp x

std::cout << reinterpret_cast<int> x << ':' << reinterpret_cast<int> y;
```

Select one:

- ☐ a.
None of the answers
- ☐ b.
9:3
- ☐ c.
2:3
- ☐ d.
8:6
- ☒ e.
8:3

The correct answer is:

8:3

Question **2**

Complete

Mark 1.00 out of 1.00

Pressing a key on the keyboard will generate a

Select one:

- ☒ a.
hardware interrupt
- ☐ b.
software-generated interrupt
- ☐ c.
child process
- ☐ d.
none of the answers
- ☐ e.
segmentation fault

The correct answer is:
hardware interrupt

Question **3**

Complete

Mark 1.00 out of 1.00

For the following statements related to DMA (Direct Memory Access),

A. DMA allows the CPU and I/O Devices to read memory in the same clock cycle, hence increasing CPU utilization.

B. DMA should be used for bulk data transfer.

C. When used correctly, DMA increases CPU utilization for potential useful work.

Select one:

- ☐ a. only B is true
- ☐ b. only C is true
- ☐ c. A is true
- ☐ d. All are true
- ☐ e. only A is true
- ☐ f. None is true
- ☒ g. B and C are true
- ☐ h. A and C are true
- ☐ i. A and B are true

The correct answer is: B and C are true

Question **4**

Complete

Mark 1.00 out of 1.00

There are three kinds of interrupts:

Select one:

- ☐ a. Divide by zero Fault, Hardware Interrupt, ISR
- ☐ b. Exception/Fault, I/O, Software-generated Interrupt
- ☐ c. System Fault, Hardware Interrupt, Software-generated Interrupt
- ☒ d. Exception/Fault, Hardware Interrupt, Software-generated Interrupt
- ☐ e. Exception/Fault, Hardware Interrupt, ISR

The correct answer is: Exception/Fault, Hardware Interrupt, Software-generated Interrupt

Question **5**

Complete

Mark 1.00 out of 1.00

Consider the following C program. For the following statements related to executable format/loader:

```
int vars[1000];
```

```
int abc(char *x)
```

```
{
```

```
    int g;
```

```
    xyz(&g);
```

```
    return strlen(x) + g;
```

```
}
```

which of the following statement is true?

Select one or more:

☐ a.
The address of **g** can be known from the executable.

☐ b. None of the answers

☐ c.
The address of **vars** can only be determined during run-time.

☐ d.
The stack of a program is already stored in the executable.

☒ e.
The address of function **abc** can be known from the executable.

The correct answer is:

The address of function **abc** can be known from the executable.

Question **6**

Complete

Mark 1.00 out of
1.00

Which of the following is not the reason why SPOOLING increases CPU utilization?

Select one:

☒ a.

While data is transferred directly to memory, the CPU can execute other jobs.

☐ b. None of the answers☐ c.

Data transfer speed between disks and memory is faster than data transfer speed between tapes and memory.

☐ d.

Disks were random access compared to magnetic tapes which were sequentially accessed

☐ e.

The transfer of data I/O devices such as line printers could happen in parallel with CPU execution

The correct answer is:

While data is transferred directly to memory, the CPU can execute other jobs.

Question **7**

Complete

Mark 1.00 out of 1.00

For the instructions described below, indicate whether it should be a privileged instruction i.e., only executable in kernel mode.

Select one or more:

☒ a.

Return from interrupt service routine (ISR).

☒ b.

Writing the CPU Clock.

☒ c.

Write the IDTR (Interrupt Descriptor Table Register).

☐ d.

Reading the CPU Clock.

☐ e.

Adding two registers.

The correct answers are:

Write the IDTR (Interrupt Descriptor Table Register).

Writing the CPU Clock.

Return from interrupt service routine (ISR).

Question **8**

Complete

Mark 1.00 out of 1.00

What information does the **interrupt vector table** store?

Select one:

☐ a.

The operating system code for interrupt service routines (handlers).

☐ b.

The interrupt vectors.

☐ c.

The operating system itself.

☒ d.

The addresses of interrupt service routines.

☐ e. none of the answers

The correct answer is:

The addresses of interrupt service routines.

◀ Attendance cs180f20-b.sg Wednesdays
14:00pm-15:40pm 16/09/2020

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