

# DUMPS ARENA

**ARM Accredited Engineer**

**ARM EN0-001**

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**QUESTION NO: 1**

A function written in C has the prototype:

```
void my_function(float a, double b, float c);
```

The function is built and linked into an application using hard floating-point linkage. What registers are used to pass arguments to the function?

- A. a->s0; b->d0; c->s1
- B. a->s0; b->d1; c->s1
- C. a->d0; b->d1; c->d2
- D. a->s0; b->d1; c-> s2

**ANSWER: B****QUESTION NO: 2**

When debugging an embedded Linux system, which one of the following techniques can be used to halt a single user thread, while allowing other threads to continue to run during the debug process?

- A. Halting a single user thread in an embedded Linux system is not possible
- B. Use the Linux kernel `printk()` function to output messages to the console
- C. Connect a Linux-aware JTAG debugger to the target, which allows single-stepping of the code
- D. Connect a debugger running on an external host device to an instance of `gdbserver` running on the target, using Ethernet

**ANSWER: D****QUESTION NO: 3**

In an ARMv7-A processor with Security Extensions, which of the following mechanisms best describes the way Secure memory is protected from access by software running in a Non-secure privileged mode?

- A. The memory system has visibility of the security status of all accesses, and will reject all Non-secure accesses to Secure memory
- B. Secure memory contents are encrypted, and cannot be decrypted by Non-secure software
- C. The level 2 cache controller blocks all accesses to Secure memory when the `SCR.NS` bit of the processor is set
- D. The MMU generates an abort on accesses to Secure memory performed by Non-secure software

**ANSWER: A**

**QUESTION NO: 4**

Many ARM cores provide two instruction sets, ARM and Thumb. Which THREE of the following statements apply to the Thumb instruction set implemented for the ARMv7-A architecture? (Choose three)

- A. Thumb is a hybrid 16/32-bit instruction set
- B. No Thumb instructions can be conditionally executed
- C. Thumb code is always slower than the equivalent ARM code
- D. Some routines take more instructions in Thumb code than in the equivalent ARM code
- E. The Thumb instruction set can access the Advanced SIMD "NEON" instructions
- F. Thumb code is always more power-efficient than equivalent ARM code

**ANSWER: A D E**

**QUESTION NO: 5**

Which TWO of the following interrupt types does a Generic Interrupt Controller (GIC) support? (Choose two)

- A. Interrupt from a private peripheral to a processor
- B. Interrupt from a processor to a private peripheral
- C. Interrupt from a shared peripheral to a processor
- D. Interrupt from a processor to a shared peripheral
- E. Interrupt from a private peripheral to a shared peripheral
- F. Interrupt from a shared peripheral to a private peripheral

**ANSWER: A C**

**QUESTION NO: 6**

In which TWO of the following locations would a compiler typically place local variables? (Choose two)

- A. ROM
- B. Heap
- C. Cache
- D. Registers

E. Stack

**ANSWER: D E**

### QUESTION NO: 7

Implementing loops using a decrementing counter which exits the loop when a counter reaches zero can be beneficial for power and performance. This is because:

- A. A simpler branch instruction can be used.
- B. Decrementing variables uses less power than incrementing them.
- C. The decrement and branch operations can be encoded as a single instruction.
- D. The loop termination condition check can be integrated into the subtract operation.

**ANSWER: D**

### QUESTION NO: 8

An undefined instruction will cause an Undefined Instruction exception to be taken when:

- A. It is fetched.
- B. It is decoded.
- C. It is executed.
- D. It writes back its results.

**ANSWER: C**

### QUESTION NO: 9

In an experiment, the time taken for an application to complete a given task is measured using a stopwatch. Which THREE of the following make up the total time? (Choose three)

- A. The time spent waiting for I/O operations
- B. The time taken to download the program via the debugger
- C. The time taken for memory accesses
- D. The time taken for the CPU to execute instructions
- E. The time taken to compile the source code
- F. The time taken to perform instruction tracing

**ANSWER: A C D**

**QUESTION NO: 10**

When an ARMv7-A MPCore system is in SMP mode, which of the following TWO operations can the processor handle automatically? (Choose two)

- A. Coherency management between all L1 data caches
- B. Broadcast of some inner-shared cache and TLB maintenance operations
- C. Broadcast of some outer-shared cache and TLB maintenance operations
- D. Coherency management between all L1 instruction caches
- E. Coherency management between all external caches

**ANSWER: A B**

**QUESTION NO: 11**

In a Cortex-A processor, after which TWO of these events is a cache maintenance operation required to ensure reliable code execution? (Choose two)

- A. Processor reset
- B. Switching from ARM to Thumb state
- C. Changing the access permissions of a page
- D. Executing a Data Memory Barrier instruction
- E. Loading data from an unaligned memory address

**ANSWER: A C**

**QUESTION NO: 12**

In the CPSR, 1=0 and F=1. Which of the following is TRUE in this case?

- A. Both IRQs and FIQs are enabled
- B. Both IRQs and FIQs are disabled
- C. IRQs are disabled and FIQs are enabled
- D. IRQs are enabled and FIQs are disabled

**ANSWER: D**

**QUESTION NO: 13**

In general, when programming in C, stack accesses will be reduced by:

- A. Disabling inlining.
- B. Never passing more than four parameters in function calls.
- C. Declaring automatic variables as "packed".
- D. Configuring the compiler to optimize for space.

**ANSWER: B****QUESTION NO: 14**

Which of the following ARM processors has the best energy efficiency (measured in mW/MHz)?

- A. Cortex-M0+
- B. Cortex-M4
- C. Cortex-R4
- D. Cortex-A15

**ANSWER: A****QUESTION NO: 15**

In an ARMV7-A system, the following C function calculates a simple checksum for an input data packet of variable length. The checksum is defined to be the sum of all of the 16-bit data items in the packet modulo 65536. The parameter `data_items` contains the number of 2-byte data items in the packet, and it cannot be zero by design.

```
unsigned short checksum(unsigned short * data, unsigned short data_items)
{
    unsigned short i;
    unsigned int sum = 0;

    for (i = 0; i < data_items; i++)
    {
        sum += data[i];
    }

    return (unsigned short)(sum % 65536);
}
```

When using an ARM compiler, which TWO of the following optimizations could improve the performance of this code? (Choose two)

- A. Use a do/while loop instead of a for loop
- B. Change the type of sum to be an unsigned short
- C. Change the type of i to be an unsigned int
- D. Use signed variables instead of unsigned variables
- E. Declare sum as a global variable

**ANSWER: A C**