Q15-20 Answers: **SampleExam1Questions_SelectedFromQuestionsActuallyWrittenInThePast**

Question 15

```
FFFFFFFF

80000000
7FFFFFFF
            Stack Segment

                 ↓

                 ↑

            Dynamic Data         ⎫  Data
          - - - - - - - - - -    ⎬  Segment
            Static Data          ⎭
10000000

            Text Segment

00400000

00000000
```
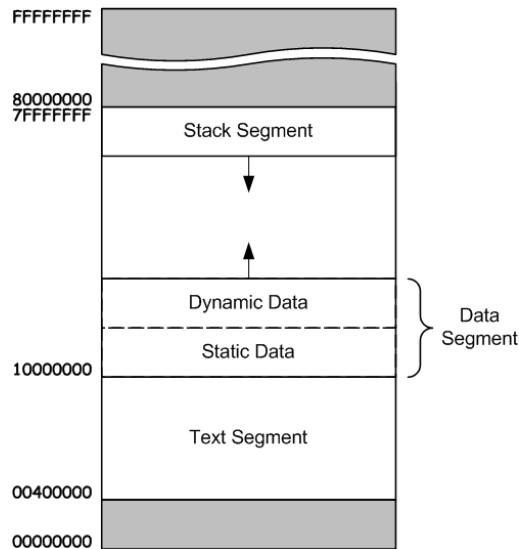
Question 16 The calling function is responsible for preserving the contents of caller-saved registers and the called function for preserving callee-saved registers.

Question 17 F

Question 18 Because there're 32 general purpose registers in the architecture ($2^5 = 32$).

Question 19 intArray: .word 1, 2, 3, 4, 5

Question 20

```
                .data
prompt:     .asciiz "Enter 2 integers: "
outStr1:    .asciiz " is the product of "
outStr2:    .asciiz " and "
                .text
                .globl main
main:       la $a0, prompt
            li $v0, 4
            syscall                     # print prompt
            li $v0, 5
            syscall                     # read 1st integer
            addu $t1, $v0, $zero         # save 1st integer in $t1
            li $v0, 5
            syscall                     # read 2nd integer
            addu $t2, $v0, $zero         # save 2nd integer in $t2
            mul $t3, $t1, $t2            # $t3 has lower 32 bits of product
            li $v0, 1
            addu $a0, $t3, $zero
            syscall                     # print product
            la $a0, outStr1
            li $v0, 4
            syscall                     # print outStr1
            li $v0, 1
            addu $a0, $t1, $zero
            syscall                     # print 1st integer
            la $a0, outStr2
            li $v0, 4
            syscall                     # print outStr2
            li $v0, 1
            addu $a0, $t2, $zero
            syscall                     # print 2nd integer
            li $v0, 10
            syscall                     # exit
```