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17/ENG02 1048

Computer Engineering
COE 306 Mid-Term Exam

Sign: ~~_____~~

Date: 25/7/2020

Question 1

- a) This is because the address coded in the instructions would have to be updated whenever new variables were inserted before existing ones.
- b) Object and listing files.

Question 2

a) Portability is a characteristic attributed to a computer program if it can be used in an operating system other than the one in which it was created without requiring much rework. This concept can also be referred to as 'portability of a language' in programming.

b) No

Reason: This is because they are different processors

c)	<table border="1"><tr><td style="text-align: center;">8</td><td style="text-align: center;">8</td></tr><tr><td style="text-align: center;">AM</td><td style="text-align: center;">AL</td></tr></table>	8	8	AM	AL	8bits + 8bits
	8	8				
	AM	AL				
AX	16 bits					
EAX	32 bits					

Question 3

a) Segmentation is assembly language - is simply the division and placing of codes into segments. Each segment is used to obtain a specific of data.

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3b) Mov Ax, 47104 ; Move 47104 to the Ax register
ADD EAX, 1279 ; add 1279 to the EAX register
Mov DS, Ax ; move Ax to Ds
main END P ; end of the main procedure

4) TITLE Add and Subtract,
; This program adds and subtracts 16-bit unsigned
; integers and stores the sum in a variable.

INCLUDE Irvine32.inc

• Data

Val1 DWORD 10h

Val2 DWORD 40h

Val3 DWORD 20h

FinalVal DWORD ?

• Code

main PROC

mov eax, Val1 ;

add ax, Val2 ;

sub ax, Val3 ;

mov FinalVal, ax ;

call DumpRegs ;

exit

main ENDP

END main