

Question 1

a) This is because the addresses coded in the instructions would have to be updated whenever the new variables were inserted before existing ones.

b) ~~The source file is the main output produced and it is translated into an object file in~~

b) ~~ELF~~ It produces a file containing Machine language called an Object file.

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 major rework.

b) NO.

Reason: This is because each assembly language is based on either a processor family or specific computer.

c) The lower half of EAX is AX.

32 bit	eax	ebx	ecx	edx
16 bit	ax			
8 bit	ah al			

Eax is a 32 bit register while ax is a 16-bit register.

~~Chhobby~~Question 3

3a) Segmentation is achieved by dividing the system memory into groups of independent segments referenced by pointers located into segment registers.

b) Main Proc Move 47104 to AX
 MOV AX, 47104 ; ~~AX = 47104~~
 ADD EAX, 1270 ; ~~EAX =~~ Add 1270 to EAX
 MOV DS, AX ; DS = AX (Move AX to DS)
 main ENDP ; The Exit statement

c) i) value 1 BYTE 6 Dh ; character constant
 ↑ ↑ ↓ ↘
 label Directive Initializer value

ii) value 2 DWORD ? ; uninitialized byte

iii) value 3 SBYTE -10, -20, -30, -40, 50
 Answer - Smallest signed byte

~~Ally~~Question 4

a) TITLE Substruction (sub-csm)
; this program subtracts 3 16-bit integers

```
INCLUDE Irvine32.inc
.data
```

```
val1 WORD 10,000h
```

```
val2 WORD 5,000h
```

```
val3 WORD 2,000h
```

```
final_val
```

```
.code
```

```
main PROC
```

```
mov ax, val1 ; ax = 10,000h
```

```
sub ax, val2 ; ax = 5,000h
```

```
sub ax, val3 ; ax = 3,000h
```

```
mov final_val,
```

```
'Dump Regs
```

```
exit
```

```
main ENDP
```

```
END main
```