Kingdom of Saudi Arabia
Ministry of Education
College of Computer
Department of Computer Engineering

Course Code and Name : Assembly Language Programming COE224
Mid Exam
472 Date: 4-5-2026 Duration:1hour

Student Name:	Student ID:

The exam starts here

Q1 : Consider the following complete x86 assembly program, where line numbers are shown on the left.Identify the line(s) that contain syntax errors). If you mistakenly identify syntactically correct lines,points will be deducted. Answer the two questions at the bottom of the program. (5 mark)

```
1. model flat , stdcall
2. var2 = 10
3. .data
4. var1 WORD 32h
5. .code
6. main proc
7. mov ebx , OFFSET var1
8. mov bl , 125h
9. mov cl , 'c'
10.      mov al , var1
11.      add var1 , var2
12.      add [ebx] , al
13.      main endp
14.      end main
```

How many line(s) did you identify as containing syntax error(s)in the above program? **Answer:**
Which line number(s) in the above program contain syntax error(s)? **Answer:**

Q2 : Write the hexadecimal value of the destination operand after executing the assembly instructions given below (4 mark)

`.data`
`nums DWORD 10000h , 20000h , 0FFh , 80h`
`.code`
	Answer :

`mov esi , OFFSET nums`	
`mov eax , [ esi + 4 ]`	`eax =`
`sub eax , [ esi ]`	`eax =`
`dec ax`	`eax =`
`add eax , [ esi + 12 ]`	`eax =`

Q3 : Write the hexadecimal value of the final destination operand after executing the asembly Instructions (5 mark)

.data wordlist LABEL WORD intList BYTE 00h , 10h , 30h , 0Ah myDouble DWORD 13246578h .code	Answer :
mov ax , WORD PTR , [myDoule +1]	ax =
mov cx , [wordlist+1]	cx =
mov dl , BYTE PTR [myDouble + 3]	dl =
mov ax , SIZEOF intList	ax =
mov ax , LENGTHOF myDouble	ax =

Q4 : Draw the memory layout showing the ofset and hexadecimal value of each byte for the variables declared below. Assume that data1 starts at offset 00000000h ,
The ASCII value of 'A' is 41h . (6 mark)

```
.data
data1 WORD 1234567h
data1 DWORD "AB"
```

OFFSET	Hexadecimal value