**2020/1 Assembly Dersi Ödev 1**

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*Cevaplarınızı word dosyası olarak online.yildiz.edu.tr’den yükleyiniz*

**Question 1:** What are the default segment registers for SP, BX, DI, BP, SI?

**Question 2:** Find the assembly instruction that produces the machine code 8B07H.

**Question 3:** Find the assembly instruction that produces the machine code 8B9E004CH.

**Question 4:** Find the machine code equivalent of the instruction MOV SI, [BX+2].

**Question 5:** Identify the error in the instruction MOV CS, AL.

**Question 6:** Explain the difference between the instructions MOV DI, NUMBER and LEA DI, NUMBER.

**Question 7:** Write the instruction that moves the content of the memory location pointed to by BX within the segment pointed to by ES into the AH register.

**Question 8:** Write the ADD instruction that adds BX to AX.

**Question 9:** Write the ADD instruction that adds the value 12H to AL.

**Question 10:** Write the ADD instruction that adds DI to BP.

**Question 11:** Write the ADD instruction that adds the value 22H to CX.

**Question 12:** Write the ADD instruction that adds the content of the address pointed to by SI to AL.

**Question 13:** Write the ADD instruction that adds CX to the content of the address labeled DENEME.

**Question 14:** What is the error in the instruction ADD CX, AH?

**Question 15:** Write the instructions that add AL, AH, BL, and CL and store the result in DX.

**Question 16:** Identify the error in the instruction INC [BX].

**Question 17:** Explain the difference between the SUB and CMP instructions.

**Question 18:** What is the difference between the IMUL and MUL instructions?

**Question 19:** Where is the remainder stored as a result of the DIV instruction?

**Question 20:** Given AX=1001H and DX=20FFH, how do the C, A, S, Z, and O flags change after executing the instruction ADD AX, DX?

**Question 21:** Write the assembly instructions to find the cube of the number stored in DL (10 points).

**Question 22:** One of the methods used to generate random numbers is the "linear congruential generation" method. In this method, the next random number (xt+1) is calculated according to the formula based on the previous random number (xt). The value of x0 is called the seed. For the values m=8191, a=884, and c=1, you are asked to generate a random number between 0-255 using the given method. Write a complete EXE program in assembly language that takes the number read from offset 23 in the code segment as the seed and generates a random number. Define the values of m, a, and c appropriately in the data segment and store the generated random number in the data segment (50 points).