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BATCH- A2, 5TH SEM

EXERCISE 3

QUESTION 1

1. Give the register value for each of the following instructions after it is executed. Assume R0=0x4545, R1=0x5454 and R2=0xFF00.

a) AND R3, R2, R0

b) AND R3, R2, R2

c) AND R3, R0, #0xFF

d) ORR R3, R0, #0x0F

e) ORR R3, R2, R1

f) EOR R0, R0, #0x45

g) EOR R0, R0, R0

CODE:

```
AREA PROG,CODE,READONLY
ENTRY
LDR R0,=0X4545
LDR R1,=0X5454
LDR R2,=0XFF00
AND R3,R2,R0
AND R4,R2,R2
AND R5,R0,#0XFF
ORR R6,R0,#0X0F
ORR R7,R2,R1
EOR R8,R0,#0X45
EOR R9,R0,R0
END
```

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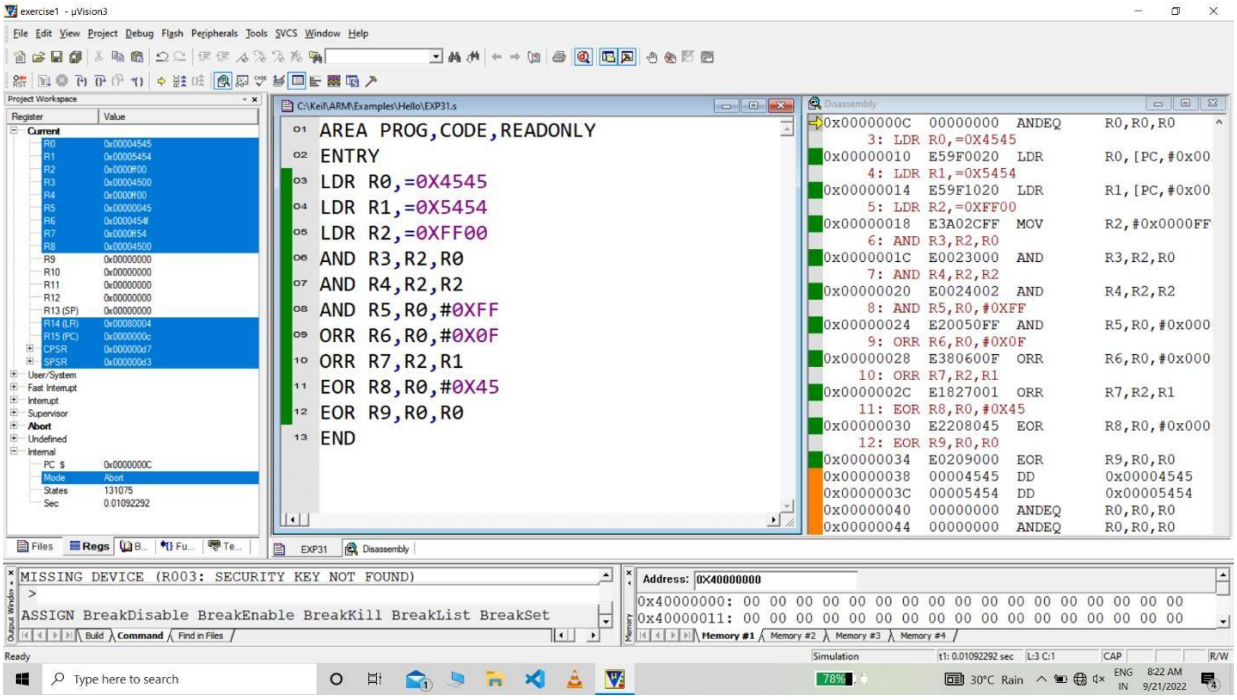
OUTPUT:



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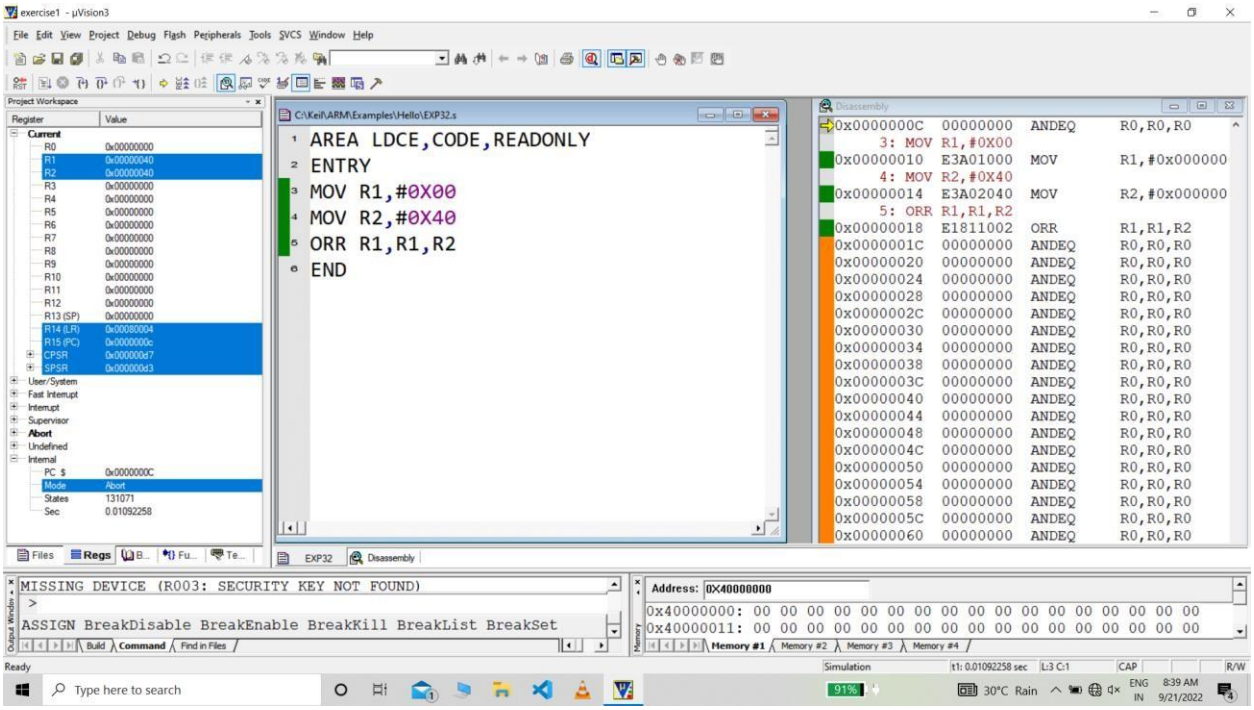
QUESTION 2

Write an instruction that sets bit 6 of R1 without affecting other bits.

CODE:

```
AREA LDCE,CODE,READONLY
ENTRY
MOV R1,#0X00
MOV R2,#0X40
ORR R1,R1,R2
END
```

OUTPUT:



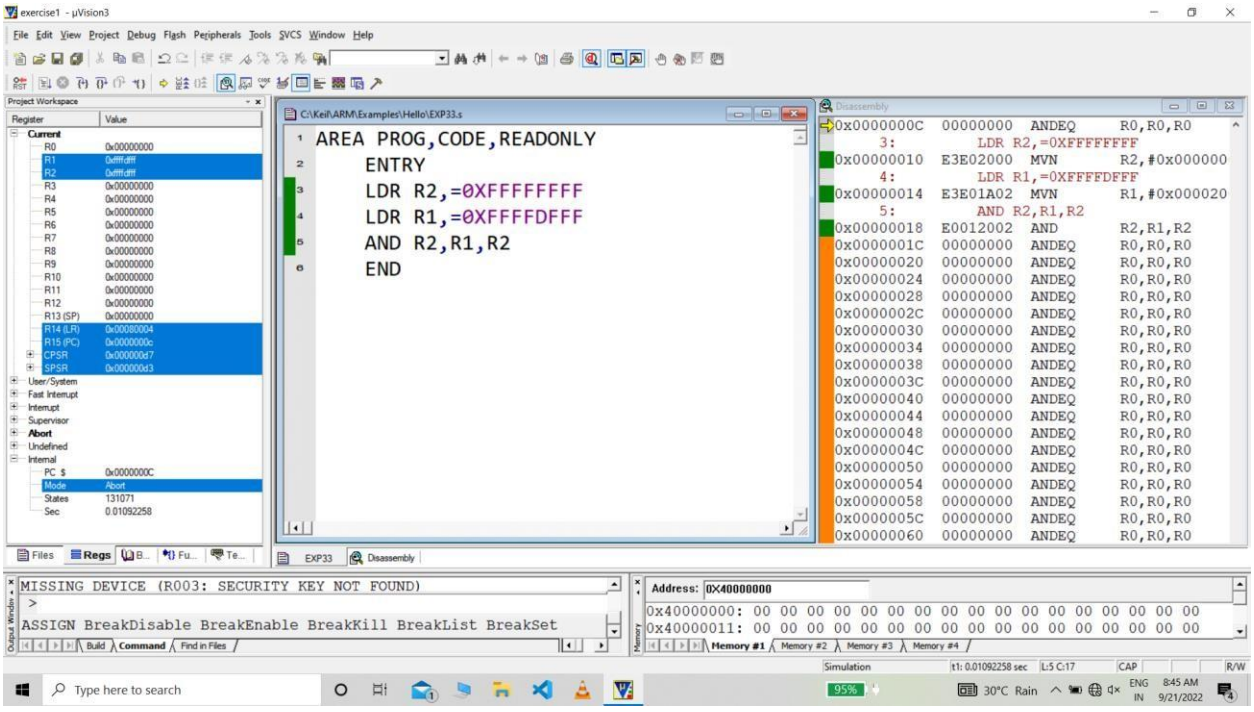
QUESTION 3

Write an instruction that clear bit 13 of R2 without affecting other bits.

CODE:

```
AREA PROG,CODE,READONLY
        ENTRY
        LDR  R2,=0XFFFFFFFF
        LDR R1,=0XFFFFDFFF
        AND R2,R1,R2
        END
```

OUTPUT:



QUESTION 4

Write a program to multiply the following values. (R1=0x5578, R2=0xaaa, R3=0xaabb987f, R4=0x12345678).

a) Multiply R1 and R2

b) Multiply R1 and R3

c) Multiply R3 and R4

d) Perform (R1 * R3 + R3)

CODE:

```
AREA PROG,CODE,READONLY
        ENTRY
        LDR R1,=0X5578
        LDR R2,=0Xaaa
        LDR R3,=0Xaabb987f
        LDR R4,=0X12345678
        LDR R10,=0X00
        MUL R5,R1,R2
        UMULL R6,R7,R1,R3
        UMULL R8,R9,R3,R4
        UMLAL R3,R10,R1,R3
        END
```

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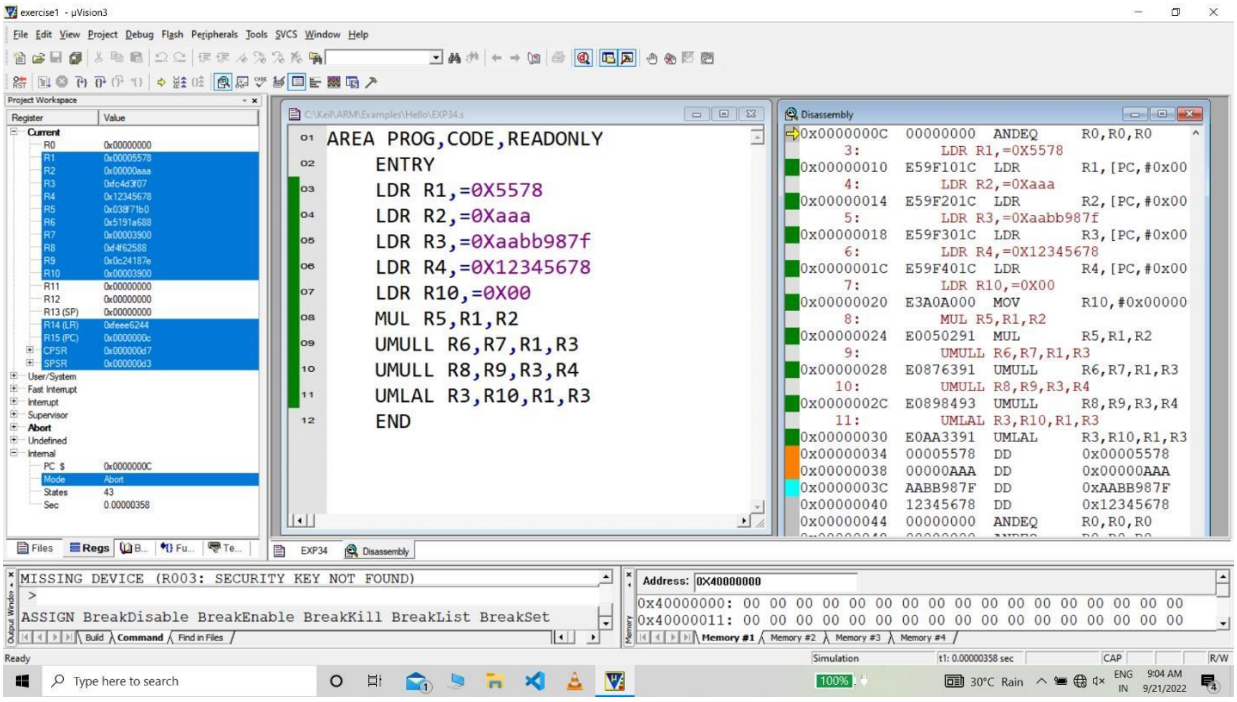
OUTPUT:



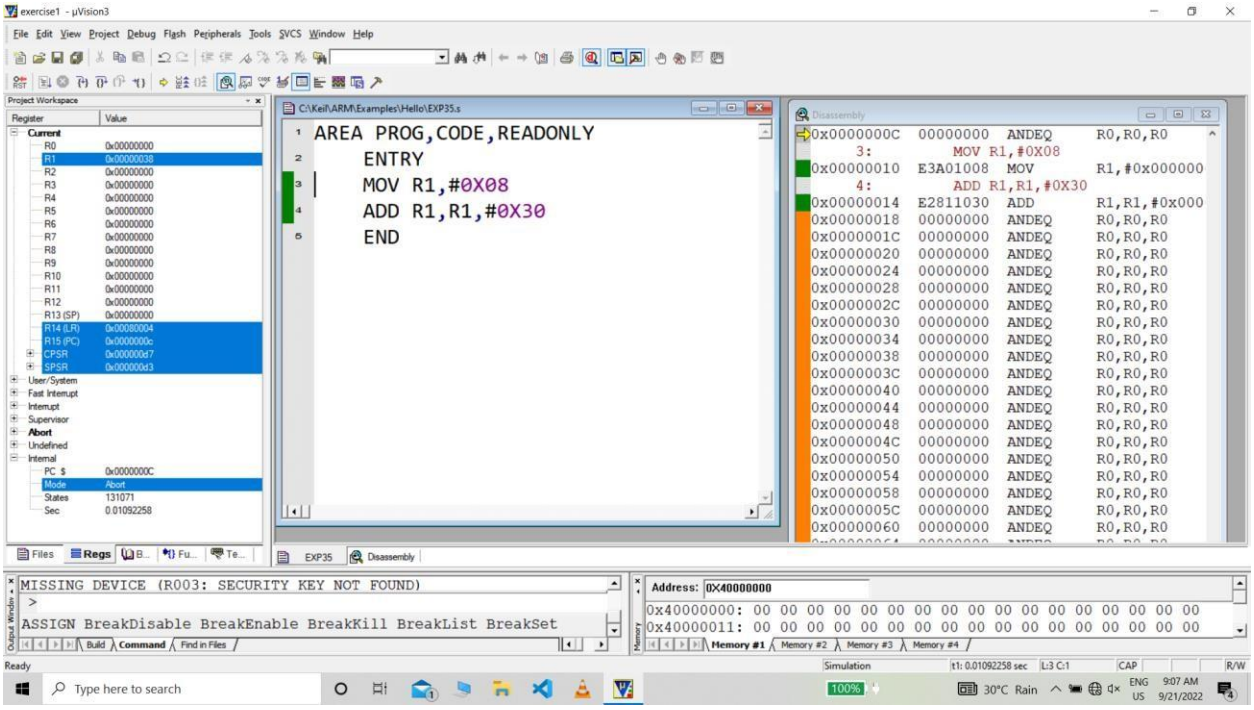
QUESTION 5

Write a program to convert unpacked BCD number into ASCII number.

CODE:

```
AREA PROG,CODE,READONLY
        ENTRY
        MOV R1,#0X08
        ADD R1,R1,#0X30
        END
```

OUTPUT:



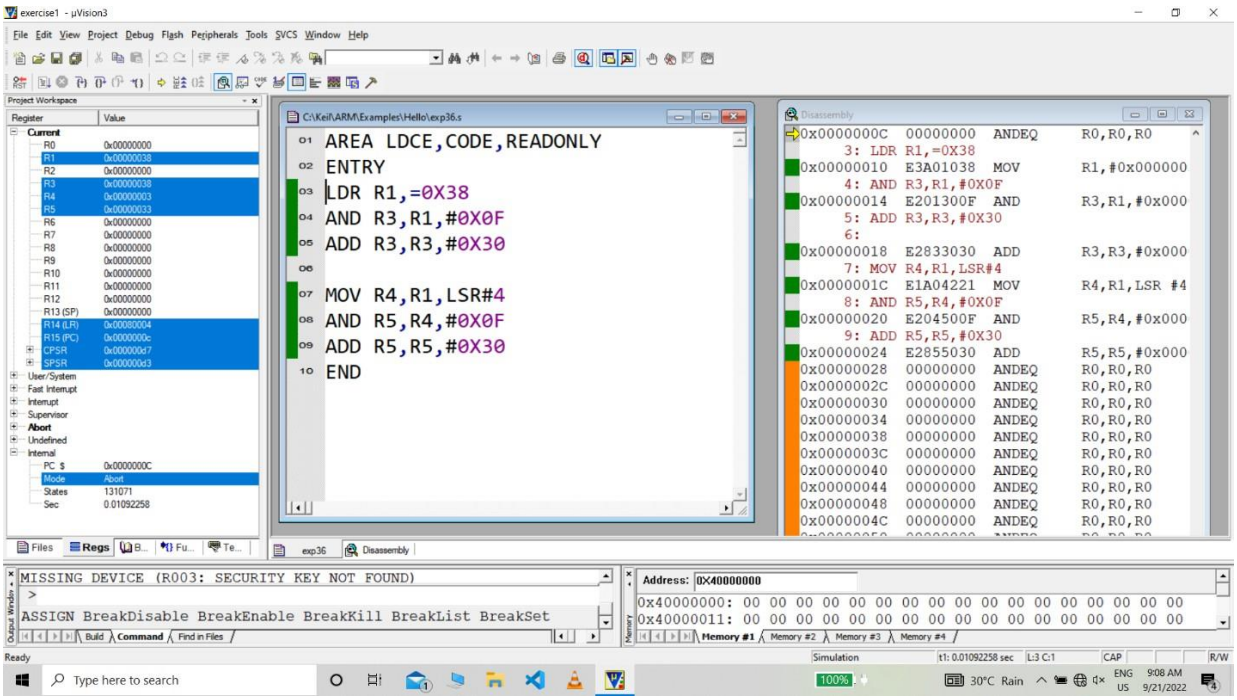
QUESTION 6

Write a program to convert packed BCD number into ASCII number.

CODE:

```
AREA LDCE,CODE,READONLY
ENTRY
LDR R1,=0X38
AND R3,R1,#0X0F
ADD R3,R3,#0X30
MOV R4,R1,LSR#4
AND R5,R4,#0X0F
ADD R5,R5,#0X30
END
```

OUTPUT:



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QUESTION 7

Write a program to convert ASCII number into packed BCD number.

CODE:

```
AREA PROG,CODE,READONLY
ENTRY
MOV R1,#0X36
MOV R2,#0X38
SUB R3,R1,#0X30
SUB R4,R2,#0X30
ADD R5,R4,R3,LSL #4
END
```

OUTPUT: