AIN SHAMS UNIVERSITY
FACULTY OF ENGINEERING

Computer and Systems Engineering Department
Specialized Programs
Junior Electrical Engineering, Electronics and Communications Engineering
Junior Electrical Engineering, Computer and Systems Engineering

Quiz 2

Questions' bank

WHAT IS MISSING IN THE BELOW CODE TO SET BITS 0 AND 4 AS INPUT AND BITS 1-3 AS OUTPUT?

```
FUNC    LDR R1, =GPIO_PORTF_DEN_R
;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;
STR R0, [R1]
BX LR
```

A) MOV R0, #0x0E

B) MOV R0, #0xFF

C) MOV R0, #0xEF

D) MOV R0, #0x0F

E) MOV R0, #0xF0

F) None of the other answers

ANSWER: F

ASSUME SYSTEM CLOCK FREQUENCY=16MHZ. FIND THE VALUES FOR THE DIVISOR REGISTERS OF UARTIBRD AND UARTFBRD FOR 115200 BAUD RATE.

A) 8, 44

B) 17, 23

C) 104, 11

D) 208, 21

ANSWER: A

ASSUME THE BUS CLOCK IS 50 MHZ. WHAT IS THE BAUD RATE IF UART0_IBRD_R EQUALS 325 AND UART0_FBRD_R EQUALS 33?

A) None of the other answers

B) 115200

C) 9600

ANSWER: C

ASSUMING 9600 BAUD RATE, WHAT IS THE TIME NEEDED TO SEND THE MESSAGE "HELLO WORLD" ON UART (QUOTES NOT PART OF THE MESSAGE)? ASSUMING NO PARITY AND 1 STOP BIT.

A) 8.3 ms

B) None of the other answers

C) 11.4 ms

D) 9.1 ms

E) 10.4 ms

ANSWER: C

ASSUMING A SWITCH IS CONNECTED NEGATIVE LOGIC WITH A PULL-UP RESISTOR, WHAT IS THE VALUE OF THE SWITCH WHEN PRESSED?

A) 0

B) 1

C) Need more information

D) None of the other answers

ANSWER: A

ASSUMING INTERRUPT 1 HAS A PRIORITY OF 4 AND INTERRUPT 2 HAS A PRIORITY OF 6. WHICH INTERRUPT HAS HIGHER PRIORITY?

A) Interrupt 1

B) They have equal priority

C) Interrupt 2

ANSWER: A

ASSUMING ODD PARITY IS ENABLED AND THE DATA TO BE SENT ON UART IS "0X33" WHAT IS THE EXPECTED VALUE OF THE PARITY BIT?

A) 1

B) 0

ANSWER: A

ASSUME SYSTEM CLOCK FREQUENCY=16MHZ. Find the values for the divisor registers of UARTIBRD and UARTFBRD for 4800 baud rate.

A) 208, 21

B) 104, 11

C) 17, 23

D) 8, 44

E) None of the other answers

ANSWER: A

IS UART HALF DUPLEX (OR) FULL DUPLEX?

A) Full Duplex

B) Half Duplex

C) None of the other answers

ANSWER: A

WHAT IS THE VALUE OF R0 AND R1 AT THE END OF THE PROGRAM?

```
AREA WRITE_variables, DATA, READWRITE
z       DCD 0
AREA MYCODE, CODE, READONLY
        ADR r4, a
        LDR r0, [r4]
        LSL r0, r0, #2
```

```
        ADR r4, b
        LDR r1, [r4]
        AND r1, r1, #15
        ORR r1, r0, r1
        LDR r4, =z
        STR r1, [r4]
B       END_LOC
a       DCD 1
b       DCD 18
END_LOC NOP
```

A) 4, 6

B) 3, 5

C) 2, 3

D) 2, 5

E) 3, 6

F) None of the other answers

ANSWER: A

TO ENABLE INTERRUPT ON A DIGITAL INPUT PIN, HOW MANY LEVELS OF INTERRUPTS ENABLE SHOULD BE SET?

A) 3

B) 2

C) 1

ANSWER: A

WHICH REGISTER CONTAINS THE STATUS BIT OF THE PORT CLOCK?

A) SYSCTL_RCGCGPIO_R

B) SYSCTL_PRGPIO_R

C) GPIO_PORTF_AMSEL_R

D) GPIO_PORTF_DIR_R

ANSWER: B

UART IS

A) Serial Communication

B) Parallel communication

C) Universal Synchronous Reception and Transmission

D) None of the other answers

ANSWER: A

WHAT DOES THIS C STATEMENT MEAN WITH RESPECT TO UART COMMUNICATION?
while(UART0_FR_R & 0x0010 != 0);

A) Waiting for any character to be received in the FIFO

B) Check if the FIFO is not empty

C) Check if the FIFO is FULL

D) None of the other answers

ANSWER: A

WHAT DOES THIS STATEMENT DO TO OUTPUT CHARACTER THROUGH UART0?while((UART0_FR_R & 0x0020) != 0);

A) Check if the buffer is full

B) Check if the buffer is not empty

C) Check if the buffer is empty

D) None of the other answers

ANSWER: A

WHAT DOES UART STAND FOR?

A) universal asynchronous receiver transmitter

B) unique asynchronous receiver transmitter

C) universal address receiver transmitter

D) unique address receiver transmitter

ANSWER: A

WHAT DOES USUALLY THE SHAPE OF THE UART FRAME?

A) start bit, data bits, stop bit(s)

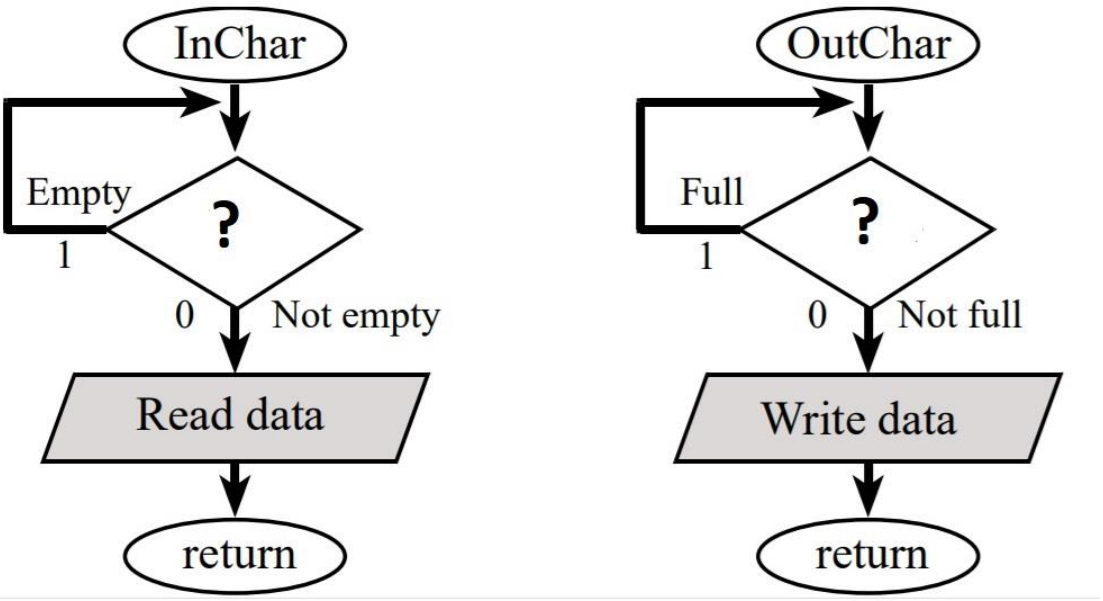
B) start bit, data bits, parity bit

C) parity bit, data bits, stop bit(s)

D) None of the other answers

ANSWER: A

WHAT IS THE EXPECTED FLAG TO REPLACE THE QUESTION MARK? [WHAT IS THE EXPECTED FLAG TO REPLACE THE QUESTION MARK ?]



A) RXFE, TXFF

B) TXFF, RXFE

C) TXFE, RXFF

D) TXFE, RXFE

E) None of the other answers

ANSWER: A

WHAT IS THE MISSING C STATEMENT IN THE BELOW CODE?

```
void UART_Init()
{ SYSCTL_RCGCUART_R |= 0x0001; //missing C statement
UART0_IBRD_R = 0x08;
 UART0_FBRD_R = 0x2C;
UART0_LCRH_R = 0x0070;
UART0_CTL_R = 0x0301; }
```

A) Disable UART

B) Enable clock of UART0

C) Enable UART

D) Set data length

E) set baud rate

F) None of the other answers

ANSWER: A

What is the output sequence if the switch pressed three times?
Note that the values of LED colors are:
RED --> 0X02
GREEN --> 0X08
BLUE --> 0X04// Start code

```
.....unsigned char button_in;unsigned char led_out = 0x02; //--------------------------

int main(){
SW1_Init();
RGBLED_Init();
while (1){    if(led_out ==0x10){       led_out = 0x02;    }
 button_in = SW1_Input();
if(button_in != 0x10){
```

```
RGB_Output(led_out);
led_out = led_out<< 1;    }   }}
```

A) Green, Blue, Red

B) Red, Blue, Green

C) Red, Green, Blue

D) Blue, Green, Red

E) Blue, Red, Green

ANSWER: B

WHAT RATE CAN DEFINE THE TIMING IN THE UART?

A) bit rate

B) baud rate

C) speed rate

D) voltage rate

ANSWER: B

WHEN IS OE BIT SET?

A) when FIFO is full and new frame has arrived

B) when FIFO is empty and new frame need to be transmitted

C) when Tx signal held low for more than one frame

D) None of the other answers

ANSWER: A

WHICH INSTRUCTION IS USED TO CLEAR THE INTERRUPT FROM PIN PE3?

A) GPIO_PORTB_ICR_R |= 0x08;

B) GPIO_PORTB_ICR_R &= 0x08;

C) GPIO_PORTB_ICR_R &= ~0x08;

D) GPIO_PORTB_ICR_R ^= 0x08;

ANSWER: A

WHICH INSTRUCTION IS USED TO ENABLE ALL INTERRUPTS?

A) CPSID I

B) CPSIE I

C) None of the other answers

ANSWER: B

WHICH OF THE FOLLOWING IS THE CORRECT INSTRUCTION FOR CLEARING BIT 5 OF PORT A DATA REGISTER?

A) GPIO_PORTA_DATA_R |= 0x20

B) GPIO_PORTA_DATA_R &= ~0x20

C) GPIO_PORTA_DATA_R ^= 0x20

D) None of the other answers

ANSWER: B

WHICH OF THE FOLLOWING IS THE CORRECT INSTRUCTION FOR TOGGLING BIT 3 OF PORT A DATA REGISTER?

A) GPIO_PORTA_DATA_R |= 0x08

B) GPIO_PORTA_DATA_R &= ~0x08

C) GPIO_PORTA_DATA_R ^= 0x08

D) None of the other answers

ANSWER: C

WHICH REGISTER IS USED FOR UART INTEGER BAUD-RATE DIVISOR PART?

A) UARTIBRD

B) UARTFBRD

C) LCRH

D) FR

E) None of the other answers

ANSWER: A

WHICH REGISTER IS USED TO ENABLE ALTERNATIVE FUNCTIONALITY ON A PIN?

A) DEN

B) AFSEL

C) AMSEL

D) None of the other answers

ANSWER: B