



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2012/2013**

**COURSE NAME : COMPUTER SYSTEM
ENGINEERING**

COURSE CODE : BEC 41603

PROGRAMME : BEC

EXAMINATION DATE : JUNE 2013

DURATION : 2 ½ HOURS

INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF SEVEN (7) PAGES

SECTION A

- Q1** (a) Briefly describe the evolution of Intel microprocessor from 8086 to 8088. (2 marks)
- (b) Relate the four (4) segment registers in 8088 with the active segments of memory. (2 marks)
- (c) Compose how a logic operation can be used to convert from the uppercase to the lowercase. (5 marks)
- (d) Based on Q1 (c), construct an assembly language programming to do a conversion from uppercase to lowercase. (11 marks)
- Q2** (a) Explain the function of INT10H function (3 marks)
- (b) Analyze the program on Figure Q2 (i) and Q2(ii). Differentiate the program given with the hierarchical program (ordinary program). (12 marks)
- (c) Evaluate the program in Q2 (i) and Q2 (ii) by giving the advantages of a style of that program (5 marks)
- Q3** (a) Express the important of 8284 clock generator. (3 marks)
- (b) A computer system with an Intel microprocessor requires 16Kx8 ROM. Based on Figure Q3 and Table Q3, investigate a suitable design by evaluate the address range for
 (i) Y6 and
 (ii) Y7 (12 marks)
- (c) Predict the purpose of the design in Q3 (b). (5 marks)

SECTION B

Q4 (a) Explain the function of DREQ and DACK in DMA 8237 chip.

(5 marks)

(b) Analyze the program in Figure Q4 (b) by giving comment for the instructions.

(10 marks)

(c) By referring to Figure Q4(c), select the suitable line of code to change the data format and baud rate where the data format must be transferred in 6 bit length, odd parity and for the baudrate using 64x.

(5 marks)

Q5 (a) State six (6) steps in establishing communication between computer and printer

(5 marks)

(b) Construct C statement to perform the following using int86 function

(i) Save the current cursor position

(ii) Set the cursor to row 12, column 8

(10 marks)

(c) Differ the code in Q5 (b) (i) and Q5 (b) (ii) using assembly language.

(5 marks)

-END OF QUESTION-

FINAL EXAMINATION

SEMESTER/SESSION: SEM II / 2012/2013
 COURSE NAME: COMPUTER SYSTEM ENGINEERING

PROGRAMME: BEC
 COURSE CODE: BEC41603

```

TITLE   PROG7-1MM   ;SIMPLIFIED
                ; SEGMENT
                ; DEFINITION

PAGE 60,132
EXTRN SUBPROG1: FAR
EXTRN SUBPROG2: FAR
PUBLIC VALUE1, VALUE2, SUM,
PRODUCT
.MODEL SMALL
;-----
.STACK 64
;-----
.DATA
VALUE1 DW 2050
VALUE2 DW 500
SUM    DW 2 DUP(?)
PRODUCT DW 2 DUP(?)
;-----
.CODE
MAIN PROC FAR
MOV AX,@DATA
MOV DS,AX
CALL SUBPROG1
CALL SUBPROG2
MOV AH,4CH
INT 21H
MAIN ENDP
END MAIN
  
```

FIGURE Q2 (i)

```

TITLE PROG7-1M2
PAGE 60,132
EXTRN VALUE1: WORD
EXTRN VALUE2: WORD
EXTRN SUM: WORD
PUBLIC SUBPROG1
.MODEL SMALL
.CODE
SUBPROG1 PROC FAR
SUB BX,BX
MOV AX, VALUE1
MOV DX, VALUE2
ADD AX,DX
ADC BX,00
MOV SUM,AX
MOV SUM+2,BX
RET
SUBPROG1 ENDP
END

TITLE PROG7-1M3
PAGE 60,132
EXTRN VALUE1: WORD
EXTRN VALUE2: WORD
EXTRN PRODUCT: WORD
PUBLIC SUBPROG2
.MODEL SMALL
.CODE
SUBPROG2 PROC FAR
MOV AX,VALUE1
MOV CX,VALUE2
MUL CX
MOV PRODUCT,AX
MOV PRODUCT+2,DX
RET
SUBPROG2 ENDP
END
  
```

FIGURE Q2 (ii)

FINAL EXAMINATION

SEMESTER/SESSION: SEM II / 2012/2013
 COURSE NAME: COMPUTER SYSTEM ENGINEERING

PROGRAMME: BEC
 COURSE CODE: BEC41603

TABLE Q3

Inputs			Outputs							
Enable	Select		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
G1 G2	C B A									
X H	XXX		H	H	H	H	H	H	H	H
L X	XXX		H	H	H	H	H	H	H	H
H L	L L L		L	H	H	H	H	H	H	H
H L	L L H		H	L	H	H	H	H	H	H
H L	L H L		H	H	L	H	H	H	H	H
H L	L H H		H	H	H	L	H	H	H	H
H L	H L L		H	H	H	H	L	H	H	H
H L	H L H		H	H	H	H	H	L	H	H
H L	H H L		H	H	H	H	H	H	L	H
H L	H H H		H	H	H	H	H	H	H	L

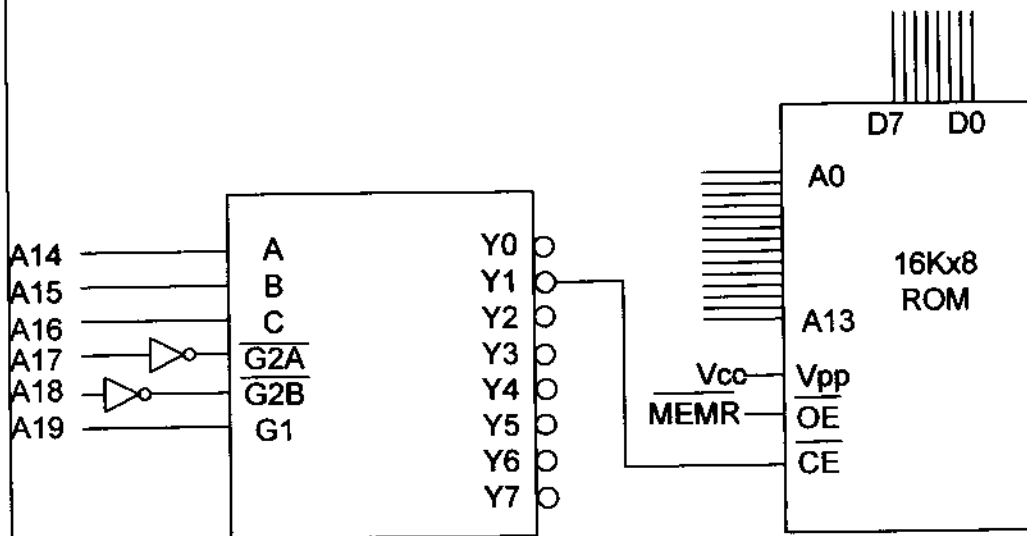


FIGURE Q3

FINAL EXAMINATION

SEMESTER/SESSION: SEM II / 2012/2013
COURSE NAME: COMPUTER SYSTEM ENGINEERING

PROGRAMME: BEC
COURSE CODE: BEC41603

DATA DB "The planet Earth" , "S"

```
        MOV AL,0
        OUT 99H, AL
        OUT 99H, AL
        OUT 99H, AL
        MOV AL, 01000000B
        OUT 99H, AL
        MOV AL, 01111110B
        OUT 99H, AL
        MOV SI, OFFSET DATA
B1:     IN AL, 99H
        AND AL, 00000001B
        JZ B1
        MOV AL, [SI]
        CMP AL, "S"
        JE B2
        OUT 98H, AL
        JMP B1
B2:     RET
```

FIGURE Q4 (b)

FINAL EXAMINATION

SEMESTER/SESSION: SEM II / 2012/2013
 COURSE NAME: COMPUTER SYSTEM ENGINEERING

PROGRAMME: BEC
 COURSE CODE: BEC41603

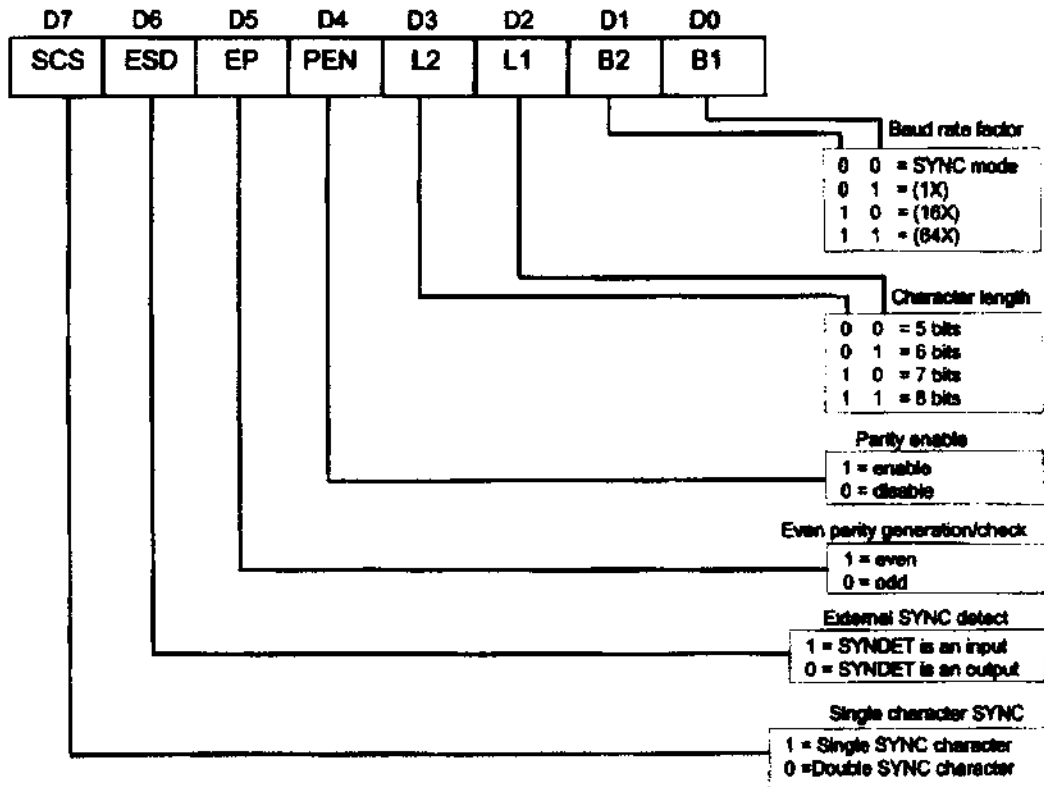


FIGURE Q4 (c)