VIT UNIVERSITY
(Estd. u/s 3 of UGC Act 1956)

Final Assessment Test (FAT) – May 2017

Course : **CSE2006 - Microprocessor and Interfacing**

Class NBR(s):**2182 / 2188 / 2192 / 2194 / 2198 / 2204 / 2210** Slot: **A2**

Time: **Three Hours** Max. Marks: **100**

PART – A (8 X 5 = 40 Marks)
Answer ALL Questions

1. a) Determine the value of AL and the value of the status flags after executing the following instruction sequence.

```
MOV AL, 7Fh
NEG AL
```

   b) If AL=09h and BL=08H, what will be the content of AX, after the execution of instruction sequence

```
MUL BL
AAM
```

2. Explain any five assembler directives with necessary example.
3. In your assumption justify the need of an interrupt and describe sequence of steps involved in interrupt.
4. Specify the Mode word of PPI in BSR mode and find out the mode word for the following scenario, Switch on LED which is connected with bit number 5.
5. a) Differentiate between parallel and serial communication. **[2.5]**

   b) Draw the bit format used for sending bits in synchronous mode. **[2.5]**
6. Categorize the 8087 instruction set and list out the instructions for transcendental functions.
7. Draw the ICW's and OCW's for controlling the 8 devices using the interrupt controller.
8. Describe the programming model of ARM processor.

PART – B (6 X 10 = 60 Marks)
Answer any SIX Questions

9. Draw and discuss about 8086 maximum and minimum mode signals briefly.
10. Write an ALP for find the number of positive and negative numbers in a set of numbers 'N' hex numbers array.
11. Write in detail about the standard programming structures of 8086 assembly language programming with an example for each. (Hint: Namely sequence, if-then, repeat, etc.,)
12. With neat sketch explain the IC 8253 Programmable interval timer.
13. a) Specify the asynchronous mode instruction format and command instruction format for 8251A.

    b) Write the initialization routine required to program the 8251A USART for asynchronous transmission with 7 data bits, 2 stop bits, and odd parity. Select a 16X clock.
14. Draw and explain the architecture of 8087 with internal registers.
15. Design and develop a hardware schematic and sketch for 4x4 key pad interface using Arduino.
16. Explain any one advanced processor architecture which is used in new generation mobile phones.

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