G 1236 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2015

Sixth Semester

Branch : Electronics and Communication Engineering

EC 010 605—MICROCONTROLLERS AND APPLICATIONS (EC)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 3 *marks.*

1. Compare microcontrollers and microprocessors.
2. Explain PSW.
3. Which bits in which registers should be set to give the serial data interrupt highest priority.
4. Write an assembly language program for reading status of switch connect in P1.3.
5. Write an example each for data movement instruction add and subtract instructions of a PIC.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*
Each question carries 5 *marks.*

6. Explain the functioning of a stack pointer.
7. Find the size of delay in following program, if the crystal frequency is 11.0592 MHz :—

			Machine cycle.
DELAY :	MOV	R3, # 250	1
HERE :	NOP		1
	NOP		1
	NOP		1
	NOP		1
	DJNZ	R3, HERE	2
	RET		2

Turn over

8. Explain the different modes of timer operation.

9. Briefly explain the intelligent LCD display of 2 lines with a neat sketch.

10. Mention the features of a PIC 18 microcontroller.

(5 × 5 = 25 marks)

Part C

Answer **all** *questions.*
Each question carries 12 *marks.*

11. Explain the architecture of 8051 with internal block schematic.

Or

12. Explain the I/O ports of 8051 with pin diagram and necessary circuits.

13. Write a program to copy the value 50 H into RAM memory locations 30H and 31H using (a) Direct addressing mode; (b) Register indirect addressing mode without a loop; (c) with a loop.

Or

14. Write an assembly language program for 8051 to find the smallest number from a group of 9 stored in the external memory starting from 4000h onwards.

15. Write a program for 8051 to transfer "ND" serially at 9600 band, 8-bit data, 1-stop bit. Do this continuously.

Or

16. Write an assembly language program to generate a square wave with 70 % duty cycle.

17. Explain DAC interfacing with 8051 with an application.

Or

18. With a neat diagram, explain how a 7-segment LED is interfaced with 8051. Write an assembly language program to display "5" using 7-segment display.

19. Explain the program and data memory organization in PIC 18 series.

Or

20. Explain about the instruction set of PIC 18 series with examples.

(5 × 12 = 60 marks)