G 398 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

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. Mention the features of 8051 μC.
2. Explain the arithmetic instruction of 8051 μC with an example.
3. Write briefly about the functions of ports in 8051 μC.
4. Name the different types of display interfacings.
5. Write short notes on pipelining in PIC μC.

(5 × 3 = 15 marks)

Part B

Answer **all** *questions.*

Each question carries 5 *marks.*

6. Draw the pin diagram of 8051 μC.
7. Write an ALP for multiplying two 8-bit numbers in 8051 μC.
8. Draw the Timer 0 format of 8051 and explain them in detail.
9. The following shows crystal frequency for three different 8051-based systems. Find the period of the machine cycle in each case :
   (a) 22 MHz.
   (b) 11.0592 MHz.
   (c) 18 MHz.
10. Explain with an example the interrupts of PIC 18 microcontroller.

(5 × 5 = 25 marks)

Turn over

Part C

Answer **all** *questions.*

Each question carries 12 *marks.*

11. Draw the functional block diagram of 8051 microcontroller and explain them in detail.

Or

12. With a neat sketch, explain the I/O ports of 8051 μC.

13. Explain in detail the different instruction sets supported by 8051 μC.

Or

14. Assume that bit P 3.2 is an input and represents the condition of an oven. If it goes high, it means that the oven is hot. Monitor the bit continuously, whenever it goes high, send a high-to-low pulse to port P 1.5 to turn on a buzzer.

15. Write a program to generate a signal having 50% duty cycle with wavelength of 10 m using 8051.

Or

16. Write a program to send only one bit at a time by interfacing with 8051 μC.

17. With neat diagram, explain the interfacing of stepper motor with 8051 μC.

Or

18. With an application, explain the ADC interfacing with 8051 μC.

19. Draw the memory organization of PIC 18 microcontroller along with its advantages.

Or

20. What is meant by interrupt? Explain the interrupt structures of PIC 18 μC.

(5 × 12 = 60 marks)