

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

(5 × 3 = 15 marks)

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

6. Draw the pin diagram of 8051 μ C.
7. Write an ALP for multiplying two 8-bit numbers in 8051 μ C.
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 μ C.

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

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 μ C.

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

Or

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

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 μ C.

(5 × 12 = 60 marks)