



Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 91454

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Fourth/Fifth Semester

Electronics and Communication Engineering

EC 6504 – MICROPROCESSOR AND MICROCONTROLLER

(Common to Information Technology, Medical Electronics/Bio Medical Engineering/Computer Science and Engineering)

(Regulations 2013)

(Also Common to PTEC6504 – Microprocessor and Microcontroller for B.E.

(Part-Time) for Computer Science and Engineering, Electronics and

Communication Engineering – Third/Fourth Semester – Regulations – 2014)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Calculate the physical address, when segment address is 1085 H and effective address is 4537 H.
2. Show how the 2 byte INT instruction can be applied for debugging.
3. Differentiate External verses internal Bus.
4. Compare closely coupled and loosely coupled configurations.
5. What are the handshake signals used in Mode – 2 configuration of 8255 ?
6. How the DMA operation performed with 8086 ?
7. Draw the pin diagram of 8051.
8. What is the significance of EA pin ?
9. Differentiate between timers and counters. Draw the diagram of TCON in 8051.
10. Which register is used for serial programming in 8051 ? Illustrate it.

PART – B

(5×13=65 Marks)

11. a) Draw the architecture and explain the functional units of 8086. (13)
- (OR)
- b) Describe the interrupts of 8086 and its types with service routine. (13)



12. a) Discuss the maximum mode configuration of 8086 by with a neat diagram. Mention the functions of the various signals.

(OR)

- b) i) Compare closely coupled configuration with loosely coupled configuration. (7)
 ii) Write a 8086 assembly language program to check whether the given string is palindrome or not. (6)

13. a) Explain in detail about DMA controller with its diagram.

(OR)

- b) Draw and explain the block diagram of alarm controller.

14. a) i) Explain in detail about the Special Function Registers in 8051. (7)
 ii) Briefly explain about addressing modes of 8051. (6)

(OR)

- b) i) Give PSW of 8051 and describe the use of each bit in PSW. (5)
 ii) Describe the functions of the following signals in 8051. (8)
 RST, EA, PSEN and ALE.

15. a) Describe the different modes of operation of timers/counters in 8051 microcontroller.

(OR)

- b) Draw a diagram to interface a stepper motor with 8051 microcontroller, also write an 8051 ALP to run the stepper motor in both forward and reverse direction with a delay.

PART - C

(1×15=15 Marks)

16. a) i) Discuss on external memory interface. ()
 ii) Critically examine LCD and keyboard interfacing. (8)

(OR)

- b) i) Examine the effectiveness of multiprocessor configurations. (8)
 ii) Present a detailed introduction on advanced processors. (7)