Reg. No. | | | | | | | | | | | | 16

**Question Paper Code : 57322**

**B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016**

**Sixth Semester**

**Manufacturing Engineering**

**EE6502 – MICROPROCESSORS AND MICROCONTROLLERS**

**(Common to Fifth semester Electronics and Instrumentation Engineering / Instrumentation and Control Engineering, Robotics and Automation Engineering and Electrical and Electronics Engineering)**

**(Regulations 2013)**

**Time : Three Hours** **Maximum : 100 Marks**

**Answer ALL questions.**

**PART – A (10 × 2 = 20 Marks)**

1. What is the function of program counter in 8085 microporcessor ?
2. Mention the purpose of SID and SOD lines.
3. What is a recursive procedures ?
4. Define stack and stack related instructions.
5. Explain the operating mode 0 of 8051 ports.
6. List the features of 8051 microcontroller.
7. What are the internal devices of a typical DAC.
8. What are the features used mode 2 in 8255 ?
9. Write a program to find 2's complement using 8051.
10. How a keyboard matrix is formed in keyboard interface ?

## PART – B (5 × 16 = 80 Marks)

11. (a) Explain with a neat block diagram the architecture of 8085 microprocessor. (16)

**OR**

(b) (i) Describe the interrupts of 8085 microprocessor. (8)

(ii) Explain the Timing diagram of STA $526A_H$. (8)

12. (a) (i) Compare memory mapping and I/O mapping technique in 8085. (8)

(ii) Write an assembly language program to sort numbers in ascending order. (8)

**OR**

(b) (i) Write a program to output square wave of 1 kHz frequency on the SOD pin of 8085 for 5 seconds. (8)

(ii) Describe the categories of instructions used for data manipulations in 8085 microprocessor. (8)

13. (a) (i) Explain the vectored interrupts in 8051 microcontroller. (8)

(ii) Explain the different addressing modes of 8051 microcontroller. (8)

**OR**

(b) Explain with a neat block diagram the architecture of 8051 microcontroller. (16)

14. (a) (i) Draw and explain the functional block diagram of 8254 timer. (8)

(ii) Draw and explain the functional block diagram of 8251. (8)

**OR**

(b) With neat diagram, explain the architecture and features of 8279 keyboard display controller. (16)

15. (a) Explain with a neat diagram the closed loop control of servo motor using microcontroller. (16)

**OR**

(b) A switch is connected to pin P2.7, write a ALP to monitor the status of switch and perform the following :

(i) if sw = 0 stepper motor moves clockwise

(ii) if sw = 1 stepper motor moves counter clockwise (16)