

Total No. of Questions : 6

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## **EKS-168**

### **B.E. IV Sem. (CGPA) Electronics and Communication Engg. Examination 2017 MICROPROCESSOR AND MICROCONTROLLER**

**Paper : EL-404**

**Time Allowed : Three Hours**

**Maximum Marks : 60**

**Note:** Attempt all questions.

**Q.1.** Write short answer to the following questions: 2×5=10

- a) Explain the execution of PUSH and POP statements in 8085 by taking suitable example.
- b) What is the function of direction flag in 8086? Explain with example.
- c) What is RS232C? And where it is used?
- d) What is the max. word length in 80486? How it effects the performance of a processor.
- e) Why all pins of port 1 in 8051 are loaded with value FF before using it as input port.

**Q.2.** a) Draw and explain the timing diagram of IN instruction in 8085. 5

- b) Write a program in assembly language for 8085 to determine number of zero's in the number stored in register E and store the result in register D. 5

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**P.T.O.**

(2)

OR

- a) Compare memory mapped I/O scheme with I/O mapped I/O for I/O addressing. 3
- b) Discuss RIM and SIM instructions used in 8085. 4
- c) Write down the function of the following instructions in 8085. 3
- i) PCHL
  - ii) PUSH B
  - iii) STAX D

- Q.3. a) Discuss different addressing modes of 8086 with suitable example. 5
- b) Write a program for 8086, to decide whether the parity of a given number is even or odd. If the parity is even, set DL to 00; else DL to 01. 5

OR

- a) Explain how instruction pipelining works in 8086? Give advantages of pipelining. 5
- b) Discuss the interrupt structure of 8086. 5

- Q.4. a) Discuss different types of descriptors supported by 80286 and their typical functions. 5
- b) Describe the data types supported by 80386. 5

OR

- a) Give advancements of 80486 over 80386. 5
- b) Discuss the salient features of Pentium architecture. 5

- Q.5. a) Explain bidirectional communication. 5
- b) Explain the operation of the 8086. 5

- a) Explain the operation of the 8086. 5
- b) Discuss the interrupt structure of 8086. 5

- Q.6. a) If a number is even, set DL to 00; else DL to 01. 5
- b) Discuss the interrupt structure of 8086. 5

- a) Explain the operation of the 8086. 5
- b) Discuss the interrupt structure of 8086. 5

b)

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Contd.....

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(3)

- Q.5. a) Explain with diagram the working of IC8255 in bidirectional mode. 5  
b) Explain the sequence of events. When a DMA request comes to a DMA controller. 5

OR

- a) Explain the working of IC8254 with different modes of its operation. 5  
b) Discuss register structure of IC8259. 5

- Q.6. a) If an 8051 microcontroller has on-chip and off-chip ROM, how are they accessed? Which Pins/signals are used in external program memory. Explain with diagram. 5  
b) Describe different modes of operation of timer in 8051 with related SFR's and start/stop mechanism. 5

OR

- a) Explain execution of the following instructions. 5  
i) ADDA, #100  
ii) SUBB A, 56H  
iii) MOVXA, @DPTR  
iv) ANL 46H, #23H  
v) ACALL, address  
b) Write a program for 8051, to add two data bytes using register direct and register indirect addressing modes. 5

