4E1214

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B. Tech. IV - Sem. (Main) Exam., May - 2019

ESC Computer Science & Engineering

4CS3 – 04 Microprocessor & Interfaces

Time: 3 Hours Maximum Marks: 120

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

(Answer should be given up to 25 words only) **[10×2=20]**

All questions are compulsory

Q.1 What is Microprocessor?

Q.2 What is the role of accumulator in Microprocessor?

Q.3 Define general purpose registers and their use.

Q.4 Why AD_0-AD_7 lines are multiplexed?

Q.5 What is the use of ALE signal?

Q.6 Define Instruction. & Instruction set.

Q.7 What are Interrupts?

Q.8 What do you mean by Input port and output Port?

Q.9 What is the need of DMA in Microprocessor?

Q.10 List the features of 8251.

PART – B

(Analytical/Problem solving questions) **[5×8=40**

Attempt any five questions

Q.1 Explain the role of following in 8085-

(a) Program Counter [4]

(b) Stack Pointer [4]

Q.2 Explain role of flag register in Assembly Language Programming also describe various flags available in 8085. [8]

Q.3 Write a program in Assembly Language to find number of 1's in the given bit pattern of 8 bits. [8]

Q.4 Explain various modes supported in 8254 Timer in detail. [8]

Q.5 Write and explain control word in 8254 Timer in detail [8]

Q.6 Explain signals of RS-232C in detail. [8]

Q.7 What is Subroutine? Explain the use of stack in CALL and RETURN Instructions. [8]

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) **[4×15=60]**

Attempt any four questions

Q.1 Explain the organization and architecture of 8255 Programmable peripheral Interface IC with a function block diagram also draw the Interfacing scheme of 8255 and 8085 in memory mapped I/O mode. [15]

Q.2 (a) Draw and explain the functional block diagram of 8085 microprocessor along with the features in detail. [10]

(b) Explain the concept of multiplexing and De multiplexing of buses. [5]

Q.3 Explain the operational difference between following pair of instructions: [5×3=15]

(a) SPHL and XTHL

(b) LHLD and SHLD Addr

(c) XRA A and MVIA, OOH

(d) DAD RP and DAA

(e) INR A and ADI01 H

Q.4 (a) Explain the organization and architecture of 8251 (USART) with a functional block diagram. [10]

(b) Differentiate between Synchronous and Asynchronous data transfer. [5]

Q.5 Explain following in detail -

(a) RS422A Standard [5]

(b) 8279 Keyboard Interface [5]

(c) Parallel Interface – Centronics & IEEE 488 [5]
