

USCSEL-231: Microcontroller Architecture & Programming

Autonomous Semester –I Paper-I

Time: 2.00 Hrs

Max. Marks: 35

Instructions to the candidates: 1) All questions are compulsory.

2) Figures to the right indicate full marks.

3) Draw neat diagrams wherever necessary.

Q1) Solve any **FIVE** of following.

[5]

a) How many register banks are present in microcontroller 8051?

b) What is the function of pin ALE?

c) Name the port which is exclusively used as I/O port.

d) Identify the addressing mode for the instruction MOV @R0, A.

e) What is the size of timer register in 8051?

f) State the default value of stack pointer in microcontroller 8051.

g) What is a role of C/T' in TMOD register.

Q2) Answer any **FIVE** of the following.

[15]

a) List the interrupts and their vector addresses in microcontroller 8051 as per their priority.

b) Explain with diagram the difference between RLA and RLC A.

c) Write an assembly program to find a square of a number.

d) Write the function of register B.

e) Comment "The carry is a dual function flag".

f) Write advantages of bit addressing modes.

g) State the steps taken by microcontroller 8051 when interrupt is generated.

Q3) Answer any **THREE** of the following.

[15]

a) Write the function of each bit in TMOD register.

b) Draw labelled functional block diagram of microcontroller 8051 and explain each block.

c) Explain all flags in PSW register.

d) Classify instruction set of microcontroller 8051 with example.

e) Write C program to initialize timer 0 in mode 2. Load TH0 with preset value 55H and load TL0 with starting value 54H.

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