

# G12403 MICROPROCESSOR AND MICROCONTROLLER PROGRAMMING

## MODEL QUESTION PAPER

Time : 3 Hours

Max.Marks: 100

### Instructions:

1. **Group A** and **Group B** questions should be answered in the Main Answer book.
2. Answer any **TEN** questions in **Group A**. Each question carries two marks.
3. Answer **ALL** questions either **(a)** subdivision or **(b)** subdivision in **Group B**. Each question carries 14 marks.

### Group – A

Marks: 10 x 3 = 30

1. Specify the functions of ALE and  $IO/\overline{M}$  signals in 8085.
2. Why are  $AD_0$ - $AD_7$  lines multiplexed?
3. What will be output after executing the instructions XRA A and ANI  $0F_H$ . Assume that Accumulator contents are  $C2_H$
4. Distinguish Memory mapped I/O and Peripheral mapped I/O
5. Give the classification of interrupts
6. List the signals associated with Transmitter section of 8251A with their significance
7. Compare Microprocessor and Microcontroller.
8. Draw the format of Program Status word of 8051.
9. Enumerate the functions of Ports of 8051.
10. Apart from Accumulator, is there any other register involved in multiply and divide instruction? State its role.
11. What would be the Accumulator content after the executing the following code. Assume that accumulator is having  $1F_H$ .
 

CPL A

CLR A
12. Draw the format of SFR used in serial communication of 8051.
13. What is the role of Opto- isolators present in interfacing circuits?
14. How to change the speed of a DC motor?
15. How does Real Time Clock differ from system clock?

### Group– B

Marks: 5 x 14 = 70

16. a) Draw the block diagram of 8085 Microprocessor and describe the functional blocks of ALU, Timing & Control unit and General purpose registers.
- (OR)**
- b) i) Explain the various addressing modes of 8085 with an example for each type (5)
  - ii) Write an assembly language code to find smallest of two given numbers. (9)

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- 17.a) i) Discuss the sequence of steps involved in the execution of an ISR. (5)  
ii) How to interface RAM with 8085? Explain in brief. (9)  
**(OR)**  
b) Describe the I/O Mode operation of 8255 PPI with suitable illustrations.
- 18.a) How is RAM organized in 8051? Explain in detail with memory map. (5)  
**(OR)**  
b) Elucidate the power saving modes of 8051 with appropriate SFR.
19. a) Describe timer operation in Auto Reload mode 2 with TCON, TMOD registers. (5)  
**(OR)**  
b) i) Develop an assembly code to perform multiplication of two given numbers. (5)  
ii) Show the contents of CY, AC, P flag after the execution of following instructions (9)  
MOV A, #38 H  
ADD A, #2F H
- 20.a) Draw Schematic of ADC interface with 8051 and Describe in detail. (5)  
**(OR)**  
b) How do you interface stepper motor to 8051? Explain with necessary circuit diagram.