

- N.B.** (1) Attempt **all** questions.
 (2) Draw neat **diagram** wherever **necessary**.
 (3) **Figures** to the **right** indicate **full** marks.
 (4) Use of calculator is **prohibited**.

1. Attempt any **two** :—

- (a) What is an Encoder ? Explain working of 8 to 3 priority encoder, IC 74 LS 148, with a neat logic diagram and a function table. **6**
- (b) Define ROM. State its uses. **6**
 Explain :— (i) PROM
 (ii) EPROM
 (iii) EEPROM.
- (c) Explain 74 LS 373 - D latch with its logic diagram and function table. State its uses. **6**

2. Attempt any **two** :—

- (a) Write the 8085 instructions for :— **6**
 (i) Load 20H in the register H.
 (ii) Decrement the accumulator.
 (iii) End of the program.
 (iv) Subtract the contents of register B from the contents of the accumulator.
 (v) Copy contents of the accumulator A into memory 2000H.
 (vi) Compare 8-bit data 32H with accumulator A.
- (b) Explain the term : Addressing mode. State and explain different types of Addressing modes of 8085 microprocessor with suitable examples of instructions. **6**
- (c) What are general purpose registers used in 8085 microprocessor ? Give their structure. What is flag ? Name the different types of the flags. **6**

3. Attempt any **two** :—

- (a) Draw the flowchart and write an assembly language program to subtract two 8-bit hexadecimal numbers, take care of borrow if generated. Store the result at suitable memory locations. **6**
- (b) Ten data bytes are stored in consecutive memory locations starting from memory address D000H. Write a program to find the smallest number from this array and store it at memory location D100H. **6**
- (c) List the different modes of operation of 8255A PPI. Explain mode 0 in brief. **6**

4. Attempt any **two** :—

- (a) Write a program to find whether the entered letter is a vowel or not. Use switch statement. • 6
- (b) What is the use of setprecision (n) and setw (n) ? When they are used in a C++ program, which header file is included ? Explain with the help of an example. 6
- (c) Write note on different operators in C++. 6

5. Attempt any **four** :—

- (a) Draw a neat diagram of a n : 1 multiplexer and explain its working. 3
- (b) What do you understand by 'buffer' ? Draw the diagram of an active high state buffer and write the truth table. 3
- (c) Find the errors in the following instructions for 8085 microprocessor and write the correct instruction :— 3
- (i) MVIA, E
- (ii) STORE C050H
- (iii) MOV B, 34H
- (d) What is meant by "cascading" of input operator and output operator ? 3
- (e) Write an assembly language program to add 2 decimal numbers 65 and 28 stored in D & C registers respectively. Store the result at C479 H. 3
- (f) Declare an integer variable named "coffee". Write a program in C++ to find the cube of this variable and print the same. 3