

| Q.No. | Sub. Sec. | Questions | Marks |
|-------|--------------|--|-------|
| 1 | | State the importance of system bus in microprocessor and explain about its types. | [5] |
| 2 | | With a neat diagram, explain the architecture of 8086 microprocessor in detail. | [10] |
| 3 | | Calculate the 20-bit physical address for each instruction and identify its addressing mode. VALUES = 3000H, [AX] = 2000H, [BX] = 3000H, [SI] = 4C00H, [DI] = 5D00H, [SP] = 5000H, [CS] = 0000H, [DS] = 2000H, [SS] = 3000H, [ES] = 6000H, [IP] = 8000H, [BP] = 2468H. (i). MOV AX, [246BH] (ii). MOV CX, [SI] (iii). MOV CX, VALUES [BP] (iv). MOV AX, [BX] [SI] (v). MOV AX, 1234 [BX][DI] | [10] |

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Assume 8255 is interfaced with 8086, where 8-switches are connected to port A and 8-LEDs to Port B. Port-C should display the number of switches that are ON.

[5]

- (i) Identify the mode of operation
- (ii) Explain the control word register format
- (iii) Formulate the control word for the above configuration.

5

Ten persons have invested their amounts in a stock market and their investment amount is stored at the memory location starting from 2000H. A profit factor of 25H rupees is added to their investment. Write an 8086 ALP to add the profit factor with the investment and store the result in the memory location starting from 3000H. Determine the number of persons who received the total amount greater than 75H and store the count value in the memory location 4000H. The details of the investment are given below.

[10]

| Person | Investment |
|--------|------------|
| A | 50H |
| B | 60H |
| C | 10H |
| D | 40H |
| E | 22H |
| F | 54H |
| G | 62H |
| H | 82H |
| I | 70H |
| J | 90H |

Write an 8086 ALP to calculate the sum of even numbers from the given array of numbers [2,56,76,77,31,22,27,12,14,15] which are stored in memory location starting from 1000H and store the result in memory location 2000H.

[10]

Total [50]