Model Question Paper

MAHATMA GANDHI UNIVERSITY

IV Semester B.Sc. Physics Programme Examination ---

APPLIED ELECTRONICS (Model II)

PH4B11U –Microprocessor and Interfacing Devices

Instructions:

1. Time allotted for the examination is 3 Hours.
2. Answer **all** question in part A. This contains 4 bunches of 4 objective type questions For each bunch, Grade A will be awarded if all the 4 questions are correct,

   B for 3, c for 2, D for 1 and E for 0.

   Answer any 5 questions from B, any 4 from Part C and any 2 from Part D.

3. Candidates can use ……(type of calculator/tables)

Part A (objective type-weight 1 each)

Fill in the blanks

Bunch 1

1. Data bus is …….. .
   a) unidirectional b) bi-directional c) tridirectional d) none of these
2. The 8085 microprocessor has …… number of flag register
   a) 4 b) 8 c) 16 d) 5
3. Read/write memory is…….
   a) volatile b) non volatile c) read only d) none of these
4. Which one of the following is a data transfer operation?
   a) ADD B b)SUB B c) CMA d) MOV A,B

Bunch 2

5. Stack pointer is a ……. bit register.
6. Program counter is a …… bit register.
7. Accumulator is a …… bit register.
8. Instruction register is a …….. bit register.

Bunch 3

9. The instruction which can load either 16 bit data or 16 bit address in to the register pair is …
10. An example for hardware interrupt is……
11. An example for non maskable interrupt is ……..
12. Highest priority interrupt input is ……

Bunch 4

13. An instruction for "Load 92H in register B" is……
14. …….. is a non vectored interrupt.
    a) TRAP b) INTR c) RST 5.5 d) RST 6.5
15. …….. is a programmable DMA controller.
    a) 8251 b) 8255 c) 8257 d) none of these
16. …… is a programmable communication interface.
    a) 8251 b) 8255 c) 8257 d) none of these

PART B (Short answer type question- weight 1 each)

17. What are the control and status signals of 8085?
18. With the help of a schematic diagram, explain how the bus AD7 – AD0 is demultiplexed.
19. Specify the functions of address and data bus.
20. Explain the functions of ALE and IO/M signals of the 8085 microprocessor.
21. What are the functions of accumulator?
22. Describe the execution of PUSH and POP instructions.
23. Enumerate the data transfer instructions of 8085.
24. List the interrupts of 8085.

PART C (Short essay/problem- weight 2 each)

25. Illustrate SIM and RIM instructions.
26. Explain the features of 8259.
27. Write an ALP to transfer 100 numbers stored from locations 2000H to locations starting from 2020H
28. Explain the syntax of different JUMP instructions.
29. Define instruction cycle, machine cycle and T-state.
30. Distinguish between I/O mapped I/O and memory mapped I/O schemes.

PART D (Essay type- weight 4 each)

31. Draw the pin diagram of 8085 and explain the functions of each pin.
32. Describe the execution of 8257 with different modes.
33. Explain the interrupt process in 8085.

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