

C 82510

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Name.....

Reg. No.....

37  
FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, JUNE 2015

(CUCSS)

Physics

PHY 4E 20—MICROPROCESSORS AND APPLICATIONS

(2012 Admissions)

Time : Three Hours

Maximum : 36 Weightage

**Section A**

*Answer all questions.*

*Each question carries 1 weightage.*

1. Explain how microprocessor works.
2. Distinguish between Machine language and Assembly language.
3. What is a shift register ? Discuss its type and applications.
4. Write the execution sequence in an assembly language program for addition of two 8 bit numbers located in two memory addresses.
5. What is 2's complement of a binary number ? Explain with suitable example.
6. What is interfacing ? State the function of interface circuit.
7. Name the common microprocessor peripherals.
8. Discuss with suitable examples, how to transfer data using interrupts.
9. Discuss how to determine control word for 8255.
10. Give the salient features of display interface 8279.
11. What are various operating modes of 8253 ?
12. What do you understand by data acquisition system ? Explain.

(12 × 1 = 12 weightage)

**Section B**

*Answer any two questions.*

*Each question carries 6 weightage.*

13. What are the various types of data formats for Intel 8085 instructions ?
14. Draw the basic architecture of Intel 8085 chip and explain.
15. Discuss how 8253 is used as programmable monoshot, and as programmable rate generator. Explain how it is used to generate square wave.

Turn over

16. Discuss in detail the operating principle of a successive approximation type A/D converter. List the main features of ADC 0800.

(2 × 6 = 12 weight)

### Section C

Answer any four questions.

Each question carries 3 weightage.

17. Find the 1's complement of the following numbers (i) 0101 ; (ii) 0100.
18. Discuss the instruction cycle, machine cycle and state.
19. Draw and explain the timing diagram for I/O write operation.
20. Write an assembly language program to get 2's complement of a 16-bit number.
21. Discuss the main features of display interface 8279.
22. Explain how an A/D converter can be realized employing a D/A converter.

(4 × 3 = 12 weight)