

BSc DEGREE EXAMINATION MAY 2018
(Sixth Semester)

Branch - **PHYSICS**

MICROPROCESSOR ARCHITECTURE & PROGRAMMING

Time : Three Hours

Maximum : 75 Marks

SECTION-A (20 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 2 = 20)

- 1 List the components of a single - chip microcomputers. Where are they generally used? Give one or two examples of single - chip microcomputer.
- 2 What are I/O devices? What are the methods by which they are identified?
- 3 Declare the two limitations for the INTEL 8085 microprocessor to be qualified as an MPU.
- 4 Name the two instructions that undertake the data transfer between microprocessor and the I/O devices and highlight their action.
- 5 What does the FLAG register represent in the 8085 programming and what do they signify?
- 6 Identify the purpose of data transfer operatives. Name two instructions and give their description for the execution.
- 7 What is meant by looping in the programming techniques of 8085? What are its classification?
- 8 Which instructions refer to the memory related arithmetic operations? Write any one in two sentences.
- 9 What is meant by 'Stack' in 8085 processor? How is it identified in the processor programming?
- 10 How to convert a BCD to its equivalent binary? Mention the steps involved.

SECTION - B (25 Marks!)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 5 = 25)

- 11 a Distinguish a single-board microcomputer from large computers.
OR
b What is the purpose of memory in a micro computing system? Write about memory map and addresses.
- 12 a In 8085, what does the machine cycle represent? Explain briefly the opcode fetch machine cycle.
OR
b How an I/O device can be interfaced with 8085? Explain the I/O executive with an example.
- 13 a What are the type of operations in the 8085 processor? Explain their purpose in brief.
OR
b Write about data transfer operations with examples. Quote atleast three.

Cont....

- 14 a Name the additional intentions involved in the arithmetic operatives.
Explain a 16-bit data transfer to register pair instruction.
' OR
- b What is conditional looping in 8085 programming techniques? How does the counter support this looping?
- 15 a What do you understand by the term “Subroutine” in the 8085 programming? How it is implemented using instruction? Discuss the sequence of events.
OR
- b Write an illustrative program for BCD - to seven segment LED code conversion.

SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

- 16 List the types of memory classification and elaborate each one of them.
- 17 Explain the 8085 MPU with the pin out and signal diagram.
- 18 On what basis the instruction set of 8085 processor is classified? Give details with examples.
- 19 Discuss with examples the data transfer from memory to the microprocessor and vice versa.
- 20 Point out the instructions necessary for using the “Stack” and explain each of them.

Z-Z-Z

END