Exam Date & Time: 29-Sep-2020 (10:00 AM - 01:45 PM)

# PSG COLLEGE OF ARTS AND SCIENCE

**Note: Writing 3hrs: Checking & Inserting Image : 30mins**

### BSc DEGREE EXAMINATION MAY 2020
### (Sixth Semester)

### Branch - PHYSICS
## MICROPROCESSOR ARCHITECTURE AND PROGRAMMING [14PHU22]

**Marks: 75**                                                          **Duration: 210 mins.**

### SECTION A

**Answer all the questions.**

| | | |
|---|---|---|
| 1) | What is a microprocessor? | (2) |
| 2) | Define operating system. | (2) |
| 3) | Why the data bus is bidirectional? | (2) |
| 4) | List out the four operations commonly performed by the microprocessor unit. | (2) |
| 5) | Define opcode and operand. | (2) |
| 6) | Name the different types of 8085 addressing modes. | (2) |
| 7) | Draw a flowchart of a continuous loop by using the unconditional jump instruction. | (2) |
| 8) | Write down the two types of compare operations used in 8085 instruction set. | (2) |
| 9) | Convert 72BCD into its binary equivalent. | (2) |
| 10) | What is subroutine? | (2) |

### SECTION B

**Answer all the questions.**

11)      Classify the different types of computers.

(5)

a)

[OR]      Describe about the five types of ROM in 8085 MPU.          (5)
b)

12)        Explain about the basic concepts in memory interfacing.

                                                          (5)

   a)

   [OR]     Write about memory mapped I/O technique in detail.

   b)                                                   (5)

13)        Assume Register B holds 93H and the accumulator holds 15H. Illustrate the results of the instructions ORA B and XRA B.

                                                             (5)

   a)

   [OR]     Discuss briefly about the debugging a program and its types.

   b)                                                   (5)

14)        List the seven blocks of a generalized flowchart illustrates data acquisitions and data processing.

                                                             (5)

   a)

   [OR]     Explain the functions of rotate instructors used in logic operations.

   b)                                                   (5)

15)        Illustrate the similarities and differences between the CALL and RET instructions used in 8085 MPU.

                                                             (5)

   a)

   [OR]     Write a subroutine program to convert a binary digit (O to F) into ASCII Hexcode.

   b)                                                   (5)

## SECTION C

**Answer 3 out of 5 questions.**

16)        Explain about the internal architecture of 8085 microprocessor with neat pinout diagram.

                                                            (10)

17)        Discuss briefly about the functions of pins of the 8085 microprocessor.

                                                            (10)

18)        Express how to write, assemble and execute a simple program in 8085 MPU.

                                                            (10)

19)        Explain the functions of arithmetic instructions related to data in memory.

                                                            (10)

20)        Elaborate the function of subroutine and explain its uses.

                                                            (10)

-----End-----