# 2021

# BCA

## [HONOURS]

## (CBCS)

## (B.Sc. Fifth Semester End Examination-2021)

### PAPER-DSE1T

***Full Marks: 40*** ***Time: 02 Hrs***

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

### Group A

**1. Answer any five questions of the following: 5x2= 10**

a. Name all the 8 bit programmable registers of 8085 microprocessor.

b. What is the role of PC register?

c. An 8085 microprocessor is connected with 1 KB memory. What shall be the length of , SP register for this system?

d. If HOLD and RST 7.5 are made active at the same time, then which signal will be serviced first by 8085?

e. What is the role of DAD B instruction?

f. State the function of given 8085 instructions: JP,JPE, JPO,JNZ.

g. Why are the PC and SP 16-bit registers?

h. Explain the function of ALE and $IO/\overline{M}$ signals of the 8085 microprocessor.

**Group B**

**Answer any four questions of the following: 5x4 = 20**

2. Suppose initially, all flags of 8085 are set to 1. Then show content of these flags after execution of each of the following instructions.

   i) LXI H, F000

   ii) XRA A

   iii) ADD H

   iv) DCR L

   v) MOV B, A

3. Classify different 8085 inturrupts based following features:

   i) hardware vs softwre inturrupts

   ii) maskable vs non-maskable interupts

   iii) vectored vs non-vectored interupts

4. Discuss roles of 8085 control signals $IO/\overline{M}, S_1, S_2, \overline{RD}, \overline{WR}$ for opcode fetch machine cycle, memory read machine cycle, and memory write machine cycle.

5. Write an ALP program for 8085 microprocessor, to find gray code of 8-bit number present in Dregister. Store your output in E-register.



6. Write an 8085 subroutine to find maximum of two 8-bit numbers present in B-register and D-register. Store the maximum element in H-register.

7. Write a 8085 ALP toreset all flags using PUSH , POP instructions.

**Group –C**

**Answer any one questions of the following: 10x1 = 10**

8. a) Find the different machine cycle that constitute the following instructions:

   LXI B, $0022_H$

   MOV M, A

   b) If operating clock frequency of 8085 is 4 MHZ then find exact times to execute each of the above two instructions.

   C) Arrange the following interrupts from highest priority to lowest priority: RST6.5, INTR,TRAP. 4+4+2

9. a) Write a 8085 ALP to initialize $(100)_{10}$ consecutivememory location starting from $F400_H$ with the data $55_H$ using loop

   b) Write a short note on unconditional jump and conditional jump instructions.

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