RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIFTH SEMESTER EXAMINATION, DECEMBER 2018

THIRD YEAR [BATCH 2016-19]

Date : 21/12/2018 **COMPUTER SCIENCE [Honours]**

Time : 11 am – 2 pm **Paper : V [Gr – B]** Full Marks : 60

Unit – I

Answer **any one** question from **question nos. 1 & 2** : [1 × 5]

1. Compare absolute decoding and partial decoding of address in 8085. (5)

2. What are the various flag registers in 8086. (5)

Answer **any three** questions from **question nos. 3 & 7** : [3 × 10]

3. a) Write an assembly language programme in 8085 to find the second maximum of ten numbers stored in memory location (without sorting method).

   b) Explain hardware model of 8085. (5 + 5)

4. a) Draw and explain the timing diagram of STA.

   b) Define peripheral mapped IO and IO mapped IO.

   c) What is PSW? (5 + 3 + 2)

5. a) Compare IN and LDA instructions of 8085.

   b) Write an assembly language program in 8085 to add two 16-bit numbers. Also calculate the estimated time to execute the program if the clock frequency is 3.072 MHz. (3 + 7)

6. a) Compare DMA with other interrupts.

   b) Explain SIM.

   c) Explain different machine cycles of 8085.

   d) What do you mean by hardware interrupt? (3 + 3 + 3 + 1)

7. a) What are the different addressing modes in 8085? Give example.

   b) How is segmented memory achieved on 8086?

   c) Calculate the physical address when the content of CS in AB00H and content of IP is 1234H in 8086 system. (3 + 4 + 3)

Unit – II

Answer **any one** question from **question nos. 8 & 9** : [1 × 5]

8. a) Differentiate between program and software product.

   b) Explain the term 'principle of decomposition'. (3 + 2)

9. a) What is need of SRS?

   b) Differentiate between verification and validation. (3 + 2)

Answer **any two** questions from **question nos. 10 & 13** : [2 × 10]

10. a) 'Job of a software developer is difficult'- Justify.

    b) Explain the necessity of negative test case.

    c) Differentiate between cohesion and coupling.

    d) What do you mean by structure chart? Give example. (3 + 2 + 2 + 3)

11. a) Design a DFD (upto level 2) of library management system of a college by stating your assumptions.

    b) Explain different types of maintainance with example. (6 + 4)

12. a) Explain state transition diagram with example.

    b) What is the necessity of designing test cases?

    c) A project was estimated to be 400 KLOC. Calculate effort and development time for embedded mode using basic COCOMO model. (5+2+3)

13. a) Draw the control flow graph for the following function and determine its cyclomatic complexity.

```
int compute_gcd (int x, int y){
while (x! = y){
if (x>y) then
x= x – y;
else
y= y-x;}
return x;}
```

    b) Briefly describe spiral model. (5+5)

———— × ————