

Instructions

1. On the first page of their answer scripts, examinees are to write down the following:

University of Calcutta

B. Sc. Part-III (General) Examination (Under 1+1+1 System), 2020

Roll No.:-

Registration No.:-

Date of Examination:-

Subject:- Electronics (General)

Paper:- IVB

Total no. of pages used (including this page):-

(e.g., 10, if 10 pages are used including first page)

2. The examinees are also to write their <roll number-paper-page no.> on the top margin of each page of their answer scripts.

3. The examinees are to write their answers mentioning the proper question no. starting from the second page onward.

4. File name of the answer script to be submitted preferably be: **eltg-paper-roll no.pdf**

5. Answer 1 question from each unit. Total 2 questions have to be submitted in a single PDF file.

Unit1: 8085 Assembly Language Programming

1. Add the following given numbers and store the result in another memory location using 8085 assembly language programming. Keep provision for a carry. (Use command ADD M, where M is a pointer to the memory location stored in the H-L register pair)

ADDRESS	DATA (HEX)
8000	83
8001	E4
8002	OUTPUT

2. Subtract the following given numbers and store the result in another memory location using 8085 assembly language programming.

ADDRESS	DATA (HEX)
8000	9F
8001	3E
8002	OUTPUT

3. Add following 16 bit numbers and store the result in another memory location using 8085 assembly language programming. Keep provision for a carry.

ADDRESS	DATA (HEX)
8000	24
8001	AB
8002	4E
8003	7C

4. Multiply the given 8 bit numbers by repeated addition algorithm and store the result in a memory location using 8085 assembly language programming.

ADDRESS	DATA (HEX)
8000	7
8001	B
8002	OUTPUT

5. Multiply the given 8 bit numbers by shift and add algorithm and store the result in a memory location using 8085 assembly language programming.

ADDRESS	DATA (HEX)
8000	7
8001	5
8002	OUTPUT

6. The integers 1, 2, 3.....9 are stored in consecutive memory location of your choice. Make the 8085 microprocessor fetch the numbers one by one and add them. Store the result in a memory location.
7. Place five 8 bit numbers in consecutive memory locations. Let the 8085 microprocessor fetch the numbers one by one and after checking, place 00 H if the number is zero and 01 H if the number happens to be otherwise, in another consecutive memory locations.
8. Add the following given numbers and store the result in another memory location using 8085 assembly language programming. Keep provision for a carry. (Use command ADD r, where r is any general purpose register)

ADDRESS	DATA (HEX)
8000	92
8001	F7
8002	OUTPUT

Unit2: C Programming

9. Calculate the factorial of 10 using C programming without using recursion.
10. Calculate the factorial of 10 using C programming using recursion.
11. Calculate the standard deviation of the following array of 8 numbers.

1, 1, 2, 4, 4, 6, 8 & 10

These numbers can be read from the keyboard.

12. Calculate the standard deviation of the following array of 10 numbers.

0, 2, 2, 3, 4, 5, 6, 6, 7 & 10

These numbers can be read from the keyboard.

13. Given $A = \begin{matrix} 2 & 3 & 2 \\ 5 & 1 & 0 \\ 1 & 0 & 7 \end{matrix}$ and $B = \begin{matrix} 0 & 3 & 5 \\ 2 & 0 & 3 \\ 1 & 5 & 8 \end{matrix}$, calculate A+B and A-B. Read the individual elements from the keyboard.

14. Given $A = \begin{matrix} 1 & 3 & 1 \\ 2 & 0 & 7 \end{matrix}$ and $B = \begin{matrix} 1 & 2 \\ 3 & 1 \\ 5 & 4 \end{matrix}$, calculate A* B.

15. Obtain the sum of first 05 digits of the given A.P. series. Read the required variables from the keyboard.

A.P.: 2, 9, 16, 23.....

16. Obtain the sum of first 05 digits of the given G.P. series. Read the required variables from the keyboard.

G.P.: 1, 6, 36, 216.....