

NATIONAL UNIVERSITY
B. Sc. (Honors) in Computer Science and Engineering
Part-I, First Semester Final Examination, 2018
CSE-510202 (Structured Programming Language Lab)
Time: 3 Hours Full Marks: 40

Section: A

Answer any TWO questions.

10x2=20

- ✓ 1. Write a program to find the area of a circle.
2. Write a program to find the all-possible roots of a quadratic equation.
- ✓ 3. Write a program that takes an integer as input and display it in reverse order.
4. Write a program to convert any integer to its binary equivalent.
5. Write a program in C to determine and print the sum of the following harmonic series for a given value of n :

$$s = 1 + \frac{1}{2^2} + \frac{1}{3^3} + \dots + \frac{1}{n^n}$$

6. Write a program in C to compute the sum of the digits of a given integer number.
7. Write a program that reads a string from keyboard and determines whether it is a palindrome or not.

Section: B

Answer any TWO questions.

10x2=20

- ✓ 1. Write a program to multiply two matrices.
2. Write a program to evaluate the expression using user defined function:

$$f(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots$$

3. Write a program using an array of structure to read the number of three subjects for n students and sort them according to their position. (1st, 2nd, 3rd).
- ✓ 4. Write a program using pointers to compute the sum of all elements stored in an array.
5. Write a program to copy the contents of one file into another.
6. Write a program to read data from keyboard, write it to a file called, INPUT, again read the same data from the INPUT file and display in on the screen.
7. Write a program to open a file named INVENTORY and store in it the following data:

Item Name	Number	Price	Quantity
AAA-1	123	15.55	150
BBB-2	125	36.12	175
CCC-3	527	32.15	115

Extend the program to read this data from the file INVENTORY and display the inventory table with the value of each item.

[Handwritten signatures and marks]

National University, Bangladesh
B.Sc.(Hons) in CSE Part-1, 1st Semester Examination -2018
CSE-510204
Electrical and Electronic Circuit Lab

Full Marks: 40

Time: 3 Hours

There are two parts in this question. Perform one experiment from each part.

Part A (Electrical Circuit)

- 1) Observe the frequency response of a resistor, an inductor and a capacitor
- 2) Design and construct a RC circuit and find out the time constant.
- 3) Determine the transient response of series RC circuit.
- 4) Design and construct a series RLC circuit, study the frequency response and calculate the resonant frequency.
- 5) Design and construct a parallel RLC circuit, study the frequency response and calculate the resonant frequency.

6) Verify Kirchhoff's voltage and current law.
7) V-I Characteristics curve of Ohm's law.

Part B (Electronic Circuit)

- 1) Design and verify the operation of an inverting amplifier using op-amp.
- 2) Design and verify the operation of a non-inverting amplifier using op-amp.
- 3) Design, implement and test the operation of an integrator circuit using op-amp.
- 4) Design, implement and test the operation of a window comparator circuit using op-amp.
- 5) Design, construct and study the operation of a band pass filter.

6) Verify input characteristics curve of a transistor of common emitter configuration.

7) Verify I-V characteristics curve of a Zener diode.

Marks Distribution:

Circuit Design	: 05
Circuit implementation:	05
Result	: 05
Viva	: 05



CH. B. M. R.