

Bachelor of Technology Computer Science and Engineering (B.Tech CSE)

Re-appear, Examination

Dec, 2024

ENC S101- Fundamentals of Computer Programming

Time: 3 Hours

Maximum Marks: 50

Instructions:

- 1) Question No. 1 under Section-A is compulsory.
- 2) Attempt any four from Q. No. 2 to Q. No. 6 under Section-B
- 3) Attempt any two from Q. No. 7 to Q. No.9 under Section-C

Section-A(Compulsory)

1. (a) Fill in the blanks with appropriate words: 3
(i) The basic goal of computer process is to convert data into..... [CO-1] [L-1]
(ii) The CPU (central processing unit) consists of ----- [CO-1][L1]
(iii) Information that comes from external source and fed into computer software is called ----- [CO-1][L-1]
1. (b) Give the term used for the following: 2 [CO-1] [L-1]
(i) A well-defined procedure for producing high-quality, low-cost software in the shortest amount of time possible.
(ii) The memory which is ultraviolet light erasable and electrically programmable is
1. (c) State one function of each of the following: 2 [CO-1] [L-1]
(i) Batch Processing System
(ii) Object-oriented programming
1. (d) Match the items given in Column-A with those in Column-B: 3 [CO-1] [L-1]

Column-A	Column-B
(i) list	(a) code reusability
(ii) class	(b) virus
(iii) RAM	(c) enhancing accuracy
(iv) Malicious software	(d) data types
(v) polymorphism	(e) primary memory
(vi) data preprocessing	(f) user defined

Section-B

2. Write a code in Python to print 4*4 matrix and then print the reverse matrix .
5[CO-2] [L-2]
3. (a) Convert the hexadecimal number 3A4 to the decimal number system. 5[CO-2] [L-2]
(b) Convert 1011 2 to octal number system.
4. Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number. Suppose the following input is supplied to the program:
34,67,55,33,12,98
Then, the output should be:
['34', '67', '55', '33', '12', '98']
('34', '67', '55', '33', '12', '98')
5[CO-3][L-3]
5. Explain function in Python. Write a program to generate Fibonacci series of n terms whose first two terms are 0 and 1.
5[CO-2][L-3]
6. Write a user defined function to calculate following expression for n=4.

$$\sin(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \dots = \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{(2n+1)!}$$

5[CO-2][L-3]

7. Write a python code to create a class hierarchy with two classes, Shape and Circle, where Circle is a subclass of Shape.
The Shape class should have a method named area that calculates and returns the area .
The Circle class should override the area method to calculate the area and print it specifically for a circle .
5[CO-4][L-5]
8. Write a Python code to concatenate the following dictionaries to create a new one.
Sample Dictionary :
dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
5[CO-4] [L-4]

Section-C

9. Perform the following operations on a list of names.
 - a) create a list of 5 odd numbers
 - b) create a list of 5 even numbers
 - c) combine the two lists
 - d) add prime numbers 11,17,29 at the beginning of the combined list
 - e) replace last three numbers in the list with 100,200,30010[CO-4] [L-5]

10. a) Explain Tuple in Python .Write a program which accepts a sequence of comma-separated numbers from console and generate a list and a tuple which contains every number. Suppose the following input is supplied to the program:
34,67,55,33,12,98

Then, the output should be:

['34', '67', '55', '33', '12', '98']

('34', '67', '55', '33', '12', '98')

- b) Write a Python program to create a lambda function that adds 15 to a given number passed in as an argument, also create a lambda function that multiplies argument x with argument y and prints the result.

5+5[CO-5] [L-5]

11. How can Python be used for data visualization? What is an outlier? Find the outlier in the following data? Also justify your decision:

a. 2, 5, 3, 6 ,8 10 15,25

b. 2, 5, 3, 6 ,8 10 15,25,55

How do you handle missing data in a dataset?

10[CO-3] [L-6]