Undergraduate Examination 2018
Semester-II (CBCS)
Computer Science
Generic Elective Course (GEC-2)
(Programming in Python)

Time : 3 Hours **Full Marks : 40**

Questions are of value as indicated in the margin

Answer Question No.**1** and **any four** from the rest

1. a) What is the maximum possible value of an integer? Write a single statement to swap two variables.
   b) Can a function return multiple values to the caller? What is the purpose of *__init__*() function in a *class*?
   c) Differentiate definite from indefinite loops and give examples.
   d) What is pseudo-random numbers? How a pseudo-random number may be generated? 2×4=8
2. a) Write the constructs/syntaxes of simple, two way, and multi-way decisions.
   b) What is library? How to create a sort of hybrid module that can be used both as a stand-alone programme and as a library?
   c) Write both recursive and non-recursive functions to find factorial of a number. 3+2+3=8
3. a) Briefly explain common loop patterns.
   b) Write a programme that finds the real solutions to a quadratic equation using exception handling. 4+4=8
4. a) Distinguish between lists and arrays.
   b) What is decision tree? Draw the decision tree to find the maximum of three numbers.
   c) Write a function that accepts two matrices and returns their product. 2+3+3=8
5. a) Write a programme that accepts a file name as input and print the count of lines, words, and characters in the file.
   b) Write a programme to extract all email ids from a file using regular expression. 4+4=8
6. a) State the operational behavious of *and, or, not* Boolean operations.
   b) Write a programme to sort student data merit-wise using *class* and Python's built-in *sort*() method with *key* parameter. Assume each student record has *rollno, name, college*, and *score* information. 3+5=8
7. Write short notes on **any two** : 4×2=8
   a) Interpreter vs. Compiler
   b) String manipulation in Python
   c) Command line arguments in Python
   d) Python dictionary

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