MASTER OF SCIENCE (INFORMATION SECURITY) (MSCIS)

Term-End Examination

June, 2024

MSE–031 : CYBER SECURITY USING PYTHON

Time : 3 Hours   *Maximum Marks : 100*

Note : *Attempt any* **four** *questions from the* **seven** *questions. Questions no. 8 is compulsory.*

1. (a) Write a program in Python to copy content of one life into another file. Support your code with suitable comments :   10

   (b) Write Python code to perform the following :   10

        (i) Establish database connection

        (ii) Creating the database 'Student'

        (iii) Creating a table 'Registration' in 'Student' database.

        (iv) Insert suitable fields like Reg. No., Name, context in 'Registration' table of 'STUDENT' database.

P. T. O.

2. (a) Briefly discuss the term Tkinter widgets. Write the purpose and python syntax of Button, Canvas, Entry, Frame and label as Tkinter widgets.   10

   (b) What is cyber security ? Discuss significance and purpose of cyber security in maturation security. Briefly discuss the 'Man-in-the middle' and 'Phishing' as cyber security threats.   10

3. (a) What is Penetration testing ? List the steps involved in Penetration testing, also list the Python libraries involved at each step. Explain the role of Faker as Python Library for cyber security.   10

   (b) Write an explain DES Encryption algorithm.   10

4. (a) Why is an operating system ? Discuss the operating system modules in Python. How files and directories are managed using as module.   10

   (b) What is network socket ? Discuss the utility of network socket in client server architecture. Also, compare Datagram socket and Stream socket.   10

5. (a) How TCP differs from UDP ? Write at least 5 characteristics of both TCP and UDP. 10

(b) Briefly discuss the utility of the following modules in network traffic analysis (NTA) using Python : 10

(i) Pcapy

(ii) Scapy

Also, give advantage and disadvantages of scapy.

6. (a) Discuss the various methodologies for network log analysis. Also, mention the various types of logs an organization should monitor for network log analysis. 10

(b) Describe the term web scrapping. Also, discuss the types of web scrappers. What is the utility of web scrapping ? 10

7. (a) Differentiate between OSI and TCP/IP models. 10

(b) Briefly explain Socket programming in Python with an example. 10

8. Write short notes on the following : 20

(a) Beautiful soup as a python library for cyber security

(b) DHCP Listener

(c) Network forensics with scapy

(d) Insecure Cipher Transformation

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