B.Tech. (Artificial Intelligence & Data Science / Artificial Intelligence)
Seventh Semester (C.B.C.S.)

# Open Elective-II : Python Programming

P. Pages : 2 **PSM/KW/23/3532/3532A**

Time : Three Hours *2604* Max. Marks : 70

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Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.

**1.** a) What are the different loop control statements available in Python? Explain with suitable examples. **8**

b) Differentiate between method overloading and method overriding. **6**

**OR**

**2.** a) Explain in brief different types of operators in Python. **8**

b) Write a program to display Fibonacci sequence for n terms. **6**

**3.** a) Write short note on **any three**. **6**

i) Inheritance ii) Encapsulation

iii) Polymorphism iv) Abstraction

b) What is mean by inheritance and explain different types of inheritance. **8**

**OR**

**4.** a) What is the lambda function? Write the characteristics of a lambda function. Explain the same with an example. **6**

b) Write Python program to calculate area and perimeter of different Shapes using polymorphism. **8**

**5.** a) Write difference between Pandas series and Numpy arrays. **6**

b) Using string slicing operation write python program to reverse each word in a given string (eg: **input**: "hello how are you", **output**: "Olleh who era uoy"). **8**

**OR**

**6.** a) How can you create a pie chart in Matplotlib explain with example? **7**

b) Compare and contrast Excel and CSV files. **7**

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|---|---|---|---|---|
| 7. | a) | What are the advantages of flask over Django. | | 4 |
| | b) | Explain the following commands. | | 6 |
| | | i) App.run(host, port, debug, options) | | |
| | | ii) @app.route('/home') | | |
| | c) | What is the procedure for database connection requests in Flask? (Give the instructions). | | 4 |
| | | **OR** | | |
| 8. | a) | Differentiate between GET and POST method. | | 4 |
| | b) | Design a code to print the table of 10 by Embedding python statements in HTML. | | 6 |
| | c) | Describe Flask memory management in short? | | 4 |
| 9. | a) | What are the various approaches of Machine learning. | | 5 |
| | b) | Differentiate between Supervised and Unsupervised learning. | | 5 |
| | c) | What does the "fit()" method in scikit-learn do? | | 4 |
| | | **OR** | | |
| 10. | a) | Explain **any one** regression algorithm. | | 7 |
| | | i) Simple Linear Regression. | | |
| | | ii) Support vector regression. | | |
| | b) | Differentiate between regression and classification algorithms. | | 7 |

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