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Faculty of Engineering
End Sem Examination Dec-2023
AU3CO46

Python Programming for Automotive Engineers -I

Programme: B.Tech.

Branch/Specialisation: AU

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Which type of programming does Python support? **1**
(a) Object-oriented programming (b) Structured programming
(c) Functional programming (d) All of these
- ii. Who developed Python programming language? **1**
(a) Wick van Rossum (b) Rasmus Lerdorf
(c) Guido van Rossum (d) Niene Stom
- iii. What will be the value of the following Python expression? **1**
4 + 3 % 5
(a) 7 (b) 2 (c) 4 (d) 1
- iv. What will be the value of the following Python expression? **1**
5**2
(a) 55 (b) 25 (c) 10 (d) 2.5
- v. Which keyword is used for function in Python language? **1**
(a) Function (b) def (c) Fun (d) Define
- vi. What will be the output of the following Python code? **1**
print("abc. DEF".capitalize())
(a) Abc. Def (b) abc. Def (c) Abc. Def (d) ABC. DEF
- vii. _____ represents an entity in the real world with its identity and **1**
behaviour.
(a) A method (b) An object (c) A class (d) An operator
- viii. _____ is used to create an object. **1**
(a) Class (b) Constructor
(c) User-defined functions (d) In-built functions

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- ix. NumPy stands for- **1**
(a) Number Python (b) Numerical Python
(c) Numbers in Python (d) None of these
- x. Which of the following library in Python is used for plotting graphs? **1**
(a) Matplotlib (b) Numpy (c) Pandas (d) Scikit
- Q.2 i. Define Python IDE. **2**
ii. Describe complete procedure to install Python. **8**
- OR iii. Describe the toolbars and work area of Jupyter Interface. Draw a **8**
diagram and show how windows look when new file opened on screen.
- Q.3 i. What will be the output of following command? **2**
print(hello)
ii. Explain all the data types used in Python. **8**
- OR iii. What do you mean by operator precedence? Explain with some **8**
examples.
- Q.4 i. Define a function. **2**
ii. Write a program for printing table of 2 upto 10 times. **8**
- OR iii. Define the following- **8**
(a) Lambda function (b) Local variable
(c) Loop (d) Argument
- Q.5 i. What is a class in Python? How is it different from an object? **2**
ii. Explain the concept of inheritance in object-oriented programming. **8**
Support answer with an example.
- OR iii. Discuss the concept of encapsulation in Python. How it helps in **8**
maintaining data integrity and security within a class?
- Q.6 i. What is the purpose of the NumPy library in Python? **2**
ii. Describe the key features of the Matplotlib library in Python and **8**
provide examples of different types of plots it can create.
- OR iii. Explain the use of the Pandas library in Python for data manipulation **8**
and analysis. Provide an example of how you would load a dataset and
perform data operations using Pandas.

Marking Scheme
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Q.1	i)	d) all of the mentioned	1
	ii)	c) Guido van Rossum	1
	iii)	a) 7	1
	iv)	b) 25	1
	v)	b) def	1
	vi)	a) Abc. def	1
	vii)	b) An object	1
	viii)	b) constructor	1
	ix)	b) Numerical Python	1
	x)	a) Matplotlib	1
Q.2	i.	Definition	2
	ii.	Description and steps of installation Anaconda Navigator	8
OR	iii.	Description	4
		Diagram	4
Q.3	i.	NameError: name 'hello' is not defined	2
	ii.	Eight data types (one mark each)	8
OR	iii.	Explanation	6
		Example	2
Q.4	i.	Definition	2
	ii.	for i in range(1, 11): result = 2 * i print(f"2 x {i} = {result}")	8
OR	iii.	Definitions (2 marks each)	8
Q.5	i.	Define	2
	ii.	Explanation	4
		Example	4
OR	iii.	Explanation	4
		Application	4

Q.6	i.	Purpose	2
	ii.	Explanation Example	5 3
OR	iii.	Explanation Example	5 3
