

PYTHON TEST

Date: 24th April, 2019

Time: 2.00pm-3.30pm

Instructions

This test has 2 sections. Section one theory questions and section two coding challenges. Attempt all the questions in both sections.

SECTION 1: THEORY

Time: 30 mins

1. Define the following terms as used in Python programming: (3mks)
 - i. Variable
 - ii. String
 - iii. function
2. Differentiate between a **class** and an **object** as used in Python programming. (3mks)
3. Explain why the **__init__(self):** is a special type of function in python. (2mks)
4. Explain the usage of the **return** keyword in Python functions. (2mks)
5. Define the following as used in Python programming: (4mks)
 - i. Argument
 - ii. Keyword argument
 - iii. Continue
 - iv. Break
6. What does '**variable scope**' mean? (2mks)
7. State the **two** rules of **variable scope** in Python. (4mks)
8. Differentiate between a **class variable** and an **instance variable**. (4mks)
9. Define **inheritance** and state and explain **2 types** of inheritance in python programming. (4mks)
10. Explain the **usage** of the **zip** function. (2mks)

11. Explain what happens behind the scenes of a **Django website** when one sends a **request** in the form of the url, **127.0.0.1:8000/login** , on the browser until they get the expected **response**. (5mks)

SECTION 2: PRACTICAL

Time: 1 hr

1. Create a Django **CRUD** application that stores the following details of students: (15mks)

- i. Full name
- ii. Age
- iii. Form
- iv. Passport photo
- v. House
- vi. Club

2. Create a **user management** app in Django that allows users to **sign up**, **login** and **logout**. Once logged in, the app should redirect the user to a **page** that displays their **username** and **email address**. (10mks)