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VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (CBCS) III-Semester Supplementary Examinations, May/June-2018

Introduction to Scripting Languages

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

- Write a python3 print statement which prints the below sentence where the string *Dhoni* is represented by a variable name, the number 98 is represented by a variable `score` and the number 77 is represented by a variable `balls`. Dhoni scored 98 runs in 77 balls.
- Change the below two python statements into a single statement and mention the version of python required to run the above two statements.

```
marks = raw_input("Enter the marks")
marks = int(marks)
```
- Name any two iterative statements supported in python along with their syntax.
- Compare a list and a dictionary with respect to their indices. Also write a python statement which creates a dictionary containing at least two key-value pairs.
- Define a function and provide the syntax for a function definition in python.
- Modify the below python code to incorporate exception handling mechanism

```
quantity = input("Enter the quantity:")
quantity = int(quantity)
```
- Assume that you have a function named `getProductPrice()` defined in module `inventory.py`. This `getProductPrice()` function is being called from another module named `printbill.py`. Provide any two ways in which you can write a python statement in `printbill.py` module to have access to `getProductPrice()` function.
- Demonstrate the concept of composition with an example.
- State any two advantages of using automated testing.
- List any four tasks which can be done using pip tool.

Part-B (5 × 10 = 50 Marks)

(All sub-questions carry equal marks)

- Given values of variables `a`, `b`, `c` and `d` as
`a = 10`, `b = 3`, `c = 1` and `d = 5`
and the expression
`z = a * b ** c + d`
 - How many steps are required to determine the value of `z`?
 - Illustrate the steps representing the order of evaluation by enclosing the operands in parentheses at each step.
 - Determine the value of `z` for python2 and python3.
 - Write a python program which takes the course name and roll number of a student as two command line arguments and prints 3 lines as output where
 - first line must print the first three characters of the course name
 - second line must print the last three character of the roll number
 - third line must print the length of string representing the course name.
Assume that the program is written in a file named `coursereg.py` and write the python command to run the program which takes sample input `python` as course name and `1602-20-737-121` as roll number.

12. a) Distinguish between a tuple and a list. Also illustrate with examples of creating a tuple and list along with any two operations which can be performed on them.
- b) Create a python program which takes five numbers from user as input; stores them in a list; calculates and displays sum of those five numbers as output. Use a for loop for taking input and calculating sum.

13. a) Illustrate the concept of user defined functions with a python program. The program must contain three functions, where the first function is a void function, the second one must be a non-void function which takes an argument and returns a value; the third function calls the first two functions. Also draw a stack diagram for the same program.

- b) Create a python program using the following keywords

i) try ii) except iii) raise iv) finally

Also mention the name of the concept which is related to above keywords.

14. a)

```
from copy import *
```

```
class Engine:
```

```
    pass
```

```
class Aeroplane:
```

```
    def __init__(self, engine):
```

```
        self.engine = engine
```

```
jet = Engine()
```

```
tejas = Aeroplane(jet)
```

```
tejas_clone = deepcopy(tejas)
```

Analyze above code and answer the following questions:

- Mention the type of object copying technique being used.
- How many number of objects will be created when the above code executes.
- Justify your answer for question ii
- State the type of relationship between the Aeroplane and Engine class.
- Draw the object diagram for above code.

- b) Relate the concept of module in python with the keyword import. Also provide an example with a python code.

15. a) Assume that the following function is present in a module named `grades.py` and is a part of the project named `evaluation`.

```
def status(marks):
```

```
    if(marks >= 40):
```

```
        return "Pass"
```

```
    else:
```

```
        return "Fail"
```

Write a python program which does the automated testing of the above code using nose tool (test for inputs 35, 40 and 53). Where would you place the python script in the project skeleton? Also specify the name of the script.

- b) Assume that you have created a project skeleton and you are using the project skeleton as a template to create a python project. Following are the details of the project

project name : `healthcare`

list of modules containing the logic : `infant_care.py`, `geriatric_care.py`

Construct a tree structure representing all the files in the project, including test scripts for all the modules.

16. a) Explain about the two modes of python interpreter along with examples.
b) Demonstrate using an example the usage of two version of for loop supported by python.
17. Answer any *two* of the following:
- a) Given the following code, draw a diagram representing the hierarchy if classes up to the topmost class.
class EngineShutDown(Exception):
 print("Engine has shut down")
Write two child classes for the above class.
Overheated class (contains one attribute named temperature)
GearFailure class (contains one attribute named noOfGears)
Also provide constructors for the same which initializes the attributes of respective classes.
- b) State the reason for using `__str__` method in python. Also write a python program which illustrates the usage of `__str__`.
- c) What is a virtual environment? Provide any three scenarios where a virtual environment is required.

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