JB Academy, Ayodhya

Half-yearly Examination

Class XII- Computer Science

Time Allowed: 03 Hrs. **MM-70**

Sec-A (21x1=21 marks)

1. Evaluate the following expression and identify the correct answer.

   16 // (4 + 2) * 5 + 23 * 4**

   A. 42 B. 46 C. 18 D. 32

2. Which of the following functions header is correct?

   a) def study(a=2, b=5, c) : b) def study(a=2, b, c=5) :

   c) def study(a, b=2, c=5): d) none of the above

3. Find the output of following code:

```
x=100
def study(x):
        global x
        x=50
print("Value of x is :", x)
```

a. 100 b. 50 c. Error d. None of the above

4. A Function that does not have any return value is known as.....

   a. Library function b. Void function

   c. Fruitful function d. None of the above

5. Identify the lines which will generate error in the following code.

```
1. f = open ("workfile.txt', 'r+')
2. f.write('0123456789abcdef')
3. f.write('xyz8466')
4. f.close()
5. f.seek (0)
6. f.read()
```

7. Predict the output of the following code:

```
def push(stk,num):
        stk.append(num)
        def pop():
        if len(stk)==0:
                print("Underflow")
        else:
                stk.pop()
stk=[10,100,-1,2,4]
push(stk,200)
pop()
pop()
pop()
push(stk,4)
```

print(stk[-1])

A. 20 B. 100 C. -1 D. 4

8. What is the primary role of the `try` block in a try-except construct? –

A. To execute code that may raise an exception

B. To handle exceptions

C. To indicate the end of the try-except construct

D. To prevent exceptions from occurring

9. In conflict between global variable and local variable with same name in local body then preference will be given to .....

a) global variable b) local variable c)non local variable d)none of these

10. Conversion of an object hierarchy in byte stream is called serialization. [T/F]

11. An exception may be raised even if the programme is syntactically correct. [T/F]

12. What is wrong with the following function definition-

```
def addEm(x,y,z):
    return x+y+z
    print(x+y+z)
```

13. Predict the output of the following code-

```
import random
l=[12,13,14,15,16]
p=random.randint(1,3)
print(l[p])
```

a)12 b) 16 c)14 d) b and c both

14. What does csv.reader() return when used to read a file?

A) A string containing the file data

B) A list of dictionaries

C) An iterable reader object that returns each row as a list

D) A pandas DataFrame

15. Pickle can be used to store which types of Python objects?

A) Only basic data types (like int, float, string)

B) Only lists and dictionaries

C) Any Python object

D) Only numeric data

16. What happens if a function is defined as follows and called with no arguments?

```
def foo(a, b=5):
   print(a, b)
```

A) It raises an error B) It prints None 5

C) It prints a 5 D) It requires at least one argument.

17. What is the default type of argument in a Python function if no special syntax is used?

A) Positional argument
B) Keyword argument
C) Default argument
D) Variable-length argument

18. What will be the output of the following Python code?

```
i = 5
print(i,end='@@')
def add():
        global i
        i = i+7
        print(i,end='##')
add()
print(i)
```

a) 5@@12##15 b) 5@@5##12 c) 5@@12##12 d)12@@12##12

19. What is the output of the given Python code?

```
st='Waterskiing is thrilling!'
print(st.split("i"))
```

a) ['Watersk', 'ng ', 's thr', 'll', ‘ng!'] b) ['Watersk', '', 'ng ', 's thr', 'll', 'ng!']
c) ['Watersk', 'i', 'ng ', 's thr', 'll', ‘ng!'] d) Error

Q20 and Q21 are Assertion(A) and Reason(R) based questions. Mark the correct choice as:

a) Both A and R are True and R is the correct explanation for A.
b) Both A and R are True and R is not the correct explanation for A.
c) A is True but R is False.
d) A is False but R is True.

20. **Assertion:** No matter what exception occurs, you can always make sure that some common action takes place for all types of exception.
Reason: The finally block contains the code that must execute.

21. **Assertion:** To use a function from a particular module, we need to import the module.
Reason: Import statement can be written anywhere in the program, before using a function from that module.

Sec-B (7x2=14 marks)

22. Write a function remove_element() in Python that accepts a list L and a number n. If the number n exists in the list, it should be removed. If it does not exist, print a message saying "Element not found".

23. The code provided below is intended to swap the first and last elements of a given tuple. However, there are syntax and logical errors in the code. Rewrite it after removing all errors. Underline all the corrections made.

```
def swap_first_last(tup)
   if len(tup) < 2:
   return tup
   new_tup = (tup[-1],) + tup[1:-1] + (tup[0])
   return new_tup

result = swap_first_last((1, 2, 3, 4))
print("Swapped tuple: "  result)
```

24. Write a function count which will count number of digits present in a text file, supply the file name as argument to count function, the function should return number of digits.

25. How many times will the following for loop execute and what will be the output-

```
for i in range(-1,7,-2):
   for j in range(3):
      print(1,j)
```

26. How is a mutable object different from an immutable object in Python? Identify one mutable object and one immutable object from the following:
(1,2), [1,2], {1:1,2:2}, '123'

27. Write the output of the given program

```
a=30
def call(x):
   global a
   if a%2==0:
      x+=a
   else:
      x-=a
   return x
x=20
print(call(35), end="#")
print(call(40), end="@")
```

28. Explain exception handling with suitable example.

Sec-C (3x3=9 marks)

29. Write the definition of a user defined function –

(i) push_words(N) which accept list of words as parameter and pushes words starting with A into the stack named InspireA

(ii) Write the function pop_words(N) to pop topmost word from the stack and return it. if the stack is empty, the function should display "Empty".

OR

A list, NList contains following record as list elements: [City, Country, distance from Delhi]
Each of these records are nested together to form a nested list. Write the following user defined functions in Python to perform the specified operations on the stack named travel.

(i) Push_element(NList): It takes the nested list as an argument and pushes a list object containing name of the city and country, which are not in India and distance is less than 3500 km from Delhi.

(ii) Pop_element(): It pops the objects from the stack and displays them. Also, the function should display "Stack Empty" when there are no elements in the stack.

30.

Identify the correct output(s) of the following code. Also write the minimum and the maximum possible values of the variable Lot

```
import random
word='Inspiration'
Lot=2*random.randint(2,4)
for i in range(Lot,len(word),3):
   print(word[i],end='$')
```

i) iain ii) in
iii) itn$ iv) ain$

31. Predict the output-

```
Con1="SILENCE-HOPE-SUCCEss@25"
Con2=""
i=0
while i<len(Con1):
        if Con1[i]>='0' and Con1[i]<='9':
           Num=int(Con1[i])
           Num-=1
           Con2=Con2+str(Num)
        elif Con1[i]>='A' and Con1[i]<='Z':
           Con2=Con2+Con1[i+1]
        else:
           Con2=Con2+'^'
        i+=1
print(Con2)
```

Sec-D (4 x 4 = 16 Marks)

32. A CSV file "Movie.csv" contains data of movie details. Each record of the file contains the following data:

1.Movie id

2.Movie name

3.Genere
4.Language
5.Released date
For example, a sample record of the file may be:
["tt0050083",' '12 Angry Men is','Thriller'.'Hindi','12/04/1957']
Write the following functions to perform the specified operations on this file

(i) Read all the data from the file in the form of the list and display all those records for which language is in Hindi.
(ii) Delete all 'Thriller' movies from the file.

33. Write a program to read a binary file stock.dat. which has the structure

Each record: Item ID (int), Item Name (string), Quantity (int)
Write python code to-
a. Create Insert method to store records in the binary file for those which have Quantity in range 10-30.
b) Write a remove method to delete a stock item from stock.dat based on Item ID.

34. Write a Python function that finds and displays all the words longer than 5 characters from a text file "Words.txt" which ends with letter 'y' or 't' , print appropriate message if no word found following the given criteria.

35. (a) Convert the following infix expression into postfix form.
A + B - C * D / E^F
(b) Find result of postfix expression using stack-
4, 8, +, 6, 5, - ,*, 3, 2, -, /

Sec- E (2 X 5 = 10 Marks)

36. (a) Predict the output of the following Python code: (2+3)

```
wildlife_sanctuary = ["Kaziranga", "Ranthambhore", "Jim Corbett", "Sundarbans",
"Periyar", "Gir", "Bandipur"]
output = [ ]
for i in range(len(wildlife_sanctuary)):
   if wildlife_sanctuary[i][-1] in 'aeiou':
      output.append(wildlife_sanctuary[i][0].upper())
print(output)
```

(b) A file "Grade.dat" has already been created with the record containing index number, name, marks and grade as sub-lists of the list. Later on, the user realised that he has made wrong entry of the grades in all the records.

Define a function Update() to open the file in "rb+" mode to read and update the grades in all the records as per the criteria mentioned below:

Marks	Grade
90 and above	A
>=80 and <90	B
Else	C

37. (a) Consider the given code and fill the gaps with the help given against each gap in bold letters. (3+2)

```
print("Learning exceptions!")
try:
   num1=int(input("Enter the first number"))
   num2=int(input("Enter the second number"))
   q=num1/num2
   print("Both the numbers entered were correct")
except _____ :          #to enter only integers
   print("Please enter only numbers")
except _____ :          #Denominator should not be zero
   print("Numbers should not be zero")
else:
   print("Great .. you are a good programmer")
_____ :                 # To be executed at the end
   print("JOB OVER ..... GET SOME REST")
```

(b)

A CSV file with the name "Countery.csv" is already available in the system that contains two fields Country and Capital. A function Capital() is defined to access information from the field and display all the country names along with their capitals where country name is more than five characters long. In the code, there are some places left blank to be filled with expression/function.
The code is written below as:

```
# A Python Code to read data from a csv file
import _____                    # Line 1
def Capital():
    fr = open("Country.csv","r")
    reader = _____              # Line2
    next(_____)                 # Line 3
    print("Country Name which contains more than five characters: ")
    for a in reader:
        if(_____):              #Line 4
            print(a)
    fr.close()
```

With reference to the given code, answer the following questions:

a) What module/function will be filled in the blank marked with Line 1?
b) What function will be filled in blank marked with Line 2?
c) What variable will be filled in the blank marked with Line 3?
d) What condition will be filled in the blank marked with Line 4?