**Half yearly Examination Class-XII**

 **Computer Science (083) 2022-23**

Max Marks: 70 SET A Time: 3 Hrs

**G*eneral Instructions:***

 ***Programming Language used is PYTHON. All questions are compulsory.***

**General  Instructions:**

(i)   This question paper is divided into 3 sections-A,B,C

(ii)   All Questions are compulsory.

(ii) Total questions are 36 . Section A (1-19), Section B(20-31),Section C(32-36)

**Section A**

1.     Which of the following cannot be a variable? [½]

 (a)   \_init\_      (b) in            (c) it             (d) on

Ans (b)

2.     What data type is the object below? [½]

 **L=1,23,”hello”,1**

 (a)   list          (b) dictionary            (c) array        (d) tuple

Ans (d)

3. Assume that the position of the file pointer is at the beginning of 3rd line in a text file.

 Which function can be used to read all the remaining lines? [½]

 Ans readlines()

4. Which of these about a dictionary is false? [½]

1. The values of a dictionary can be accessed using keys.
2. The keys of a dictionary can be accessed using values.
3. Dictionaries aren’t ordered.
4. Dictionaries are mutable.

Ans (2)

5. \_\_\_\_\_\_\_\_\_\_\_character acts as default delimiter in a CSV file [½]

 Ans comma(,)

6. Which of the following operator cannot be used with string data type? [½]

1. + (ii) in (iii) \* (iv) /

Ans (iv)

7. Which of the following function header is correct ? [½]

 (i) def cal\_si(p=100,r,t=2) (iii) def cal\_si(p=100,r=8,t)

 (ii) def cal\_si(p,r=8,t) (iv) def cal\_si(p,r=8,t=2)

Ans (iv)

8. Which of the following is not coming under number data type [½]

 (i)float (ii) integer (iii) boolean     (iv) decimal

Ans (iv)

9. Which of the following command is used to open a file “c:\pat.txt”in read mode only? [½]

(a)   fin=open(“c:\pat.txt”,”r”) (b)   fin=open(file=”c:\pat.txt”,”r+”)

(c)   fin=open(file=”c:\\pat.txt”, “r+”) (d)   fin=open(“c:\\pat.txt”,”r”)

10. Which of the following is an invalid statement ? [½]

1. abc=1,000,000 (c) a b c = 1000 2000 3000
2. a,b,c=1000,2000,3000 (d) a=b=c=1,000,000

Ans (c)

11. Which of the below given tasks cannot be performed through Data Manipulation Language (DML) commands? [½]

1. create table in the database (c) insert a record into a table
2. delete a record from a table (d) modify a record into a table

 Ans (a)

12. Given a Tuple tup1=(10,20,30,40,50,60,70,80,90). What will be the output of print(tup1([3:7:2]) ? [½]

1. (40,50,60,70,80) (c) (40,50,60,70)
2. [40,60] (d) (40,60)

Ans (d)

13. \_\_\_\_\_\_\_\_\_clause us used with “ aggregate functions”. [1]

Ans Group by clause

14.     Which code segment will output the number 20 to the console window? [1]

|  |  |
| --- | --- |
| (a)   myvalue01=”10”myvalue02=”10”myvalue01=myvalue01+myvalue02print(myvalue02) | (c)   myvalue01=10myvalue02=10print(myvalue01+myvalue02) |
| (b)   myvalue01=10myvalue02=10myvalue01=myvalue01+myvalue02print(myvalue01) | (d)   myvalue01=”10”myvalue02=”10”print(myvalue01+myvalue02) |

Ans (b) and (c)

15.     \_\_\_\_\_\_\_\_\_\_\_\_\_ function is used to write data on a binary file in Python. [1]

Ans dump()

16.     What is the output of the following expression ? [1]

 float(5+int(4.39+2.1)%2)

Ans 5.0

17. Write the correct way to call a function [1]

 Ans functionname([argument])

18. What is the correct expansion of CSV files? [1]

 Ans comma separated values

19.What’s a[1:1]. if a is a string of at least two characters then what will it show as result? [1]

 Ans It will be an empty string. In any case, a[1:1] will return an empty string

**SECTION B**

20. Given a file contact.txt having contents are: [2]

 Koyal                        5450

Komal                      7215

Kishwar                   6250

Karen                       6810

Kulpreet                  7165

What will be the output produced by the following code?

           Name=”Karen”

           file=open(“contacts.txt”, “r”)

           for line in file:

                          if name in line:

                                        print(line)

21. What will be the output produced by the following code? [2]

           my\_dict={ }

           my\_dict[ (1,2,4)] =8

           my\_dict[ (4,2,1)] =10

my\_dict[ (1,2)] =12

sum=0

for k in my\_dict:

           sum+my\_dict[k]

print(sum)

22. What are the possible outcome(s) executed from the following code and also write the maximum and minimum value generated in variable pick. [2]

           import random

           pick=random.randint(0,3)

city=[“delhi”,”mumbai”,”chennai”,”kolkata”]

for i in in city:

 for j in range(1,pick):

 print(i,end=” ”)

 print()

|  |  |
| --- | --- |
| (i) delhidelhimumbaimumbaichennaichennaikolkatakolkata | (ii)DelhiDelhimumbaidelhimumbaichennai |
| (iii)DehiMumbaiChennaikolkata | (iv)DelhiMumbaimumbaikolkatakolkatakolkata |

Ans (iii) can be one of the possible outcomes. maximum value =3 and minimum value=0

23. Rewrite the following code in Python after removing all syntax error(S). Underline each correction done in the code.                       [2]

         Def s(x):

                     a=’k’

                     print(a\*x)

                     print(a\*str(x))

         For in [1,2’, 10 :

            s(n)

Ans

 def s(x): #def should be in lowercase

                     a=’k’

                     print(a\*x)

                     print(a+str(x)) two strings can’t be used with \* operator but With + operator

         For  n in [1,2, 10 ] : loop variable not defined, closing ] missing

                     s(n) incorrect indentation

24. What will the following code fragments produce? [2x4=8]

|  |  |
| --- | --- |
| (a)  L=[‘im’,’ur’] L1=range(len(L)) for j in L1: L[ j ]=L [ j ]. upper(0 print(L)Ans [‘IM’, ‘UR’] | (c)  x=’apple’ , ‘pear’ ,‘peach’ ,‘grapefruit’  y=x.split( ‘,’) for  z  in y: if  z < ‘m’ : print( str.lower(z)) else: print( str.upper(z))Ans applePEARPEACHgrapefruit |
| (b)  keepgoing=True x=100 while  keepgoing: print(x) x=x-10 if x<50: keepgoing=FalseAns1009080706050 | (d) V=50def change(N): global V V,N=N,V print(V,N,sep=”#”,end=”@”)change(20)print(V)Ans20#50@20 |

25. Categorize the following SQL commands into DDL and DML [2]

 create,update,insert,drop

Ans DML-update,insert

 DDL-create,drop

26. Differentiate between delete and drop commands with their syntax. [2]

 OR

 Differentiate between formal and actual parameters/arguments with the help of an

 Example.

27. What are immutable and mutable types ? List immutable and mutable types of Python.[2]

 OR

    What is the difference between implicit type conversion and explicit type conversion?

Immutable- those data types which doesn’t allows change of value in place. E.g. string,number,tuple

mutable- those data types which allows change of value in place. E.g. list and dictionary.

OR

implicit type conversion is a conversion of data type of a value, performed by the compiler without programmer’s intervention. This takes place when an expression contains values of two different data types in it.

Explicit type conversion is forced by the programmer using the typecast operator().

e.g.

a=7

b=85

c=a+b #implicit conversion

d=a+(int)b #explicit conversion

28. Write a function that accepts two parameters: a dictionary and a number; and prints only the keys that have values more than the passed number.    [3]

Ans

def show(d,n):

 for i,j in d.items():

 if j>n:

 print(i)

a={1:34,2:45,3:25,4:67}

show(a,30)

29. A text file ( **check.txt** ) contains alphanumeric text. Write a program that reads this text file and prints only the numbers or digits from the file. [3]

Ans

f=open(“check.txt”)

g=f.read()

for I in g:

 if I.isdigit():

 print(i)

f.close()

                             or

Given a text file **result.txt** storing details of students, count and display the total no of words starting with ‘a’.

Ans

f=open(“**result**.txt”)

g=f.read()

d=0

for I in g.split:

 if I[0]==’a’:

 d=d+1

 print(i)

f.close()

30. Write a function in Python ,Makepush(Package) and MakePop(Package) to add a new package and delete a package from a list of package descriptions, considering them to act as push and pop operations of the stack data structure.  [3]

Ans

def Makepush(Package):

 a=int(input(“enter package title”))

 Package.append(a)

def MakePop(Package):

 if package==[ ]:

 print(“stack empty”)

 else:

 print(“deleted element”, Package.pop())

 OR

Write a function in Python ,Addnew(Book) and Remove(Book) to add a new book and remove a book from a list of books, considering them to act as push and pop operations of the stack data structure.

Ans

Book=[ ]

def Addnew(Book):

 a=input(“enter book name”)

 Book.append(a)

def Remove(Book):

 if Book==[ ]:

 print(“stack empty”)

 else:

 print(“deleted element”, Book.pop())

**31** Trace the following code and predict output produced by it. [3]

1. def power(b,p):
2. y=b\*\*p
3. return y
4.
5. def calcsquare(x):
6. a=power(x,2)
7. return a
8.
9. n=5
10. result =calcsquare(n) + power (3,3)
11. print(result)

Ans flow of execution for above code will be:

1-5-9-10-5-6-1-2-3-6-7-10-1-2-3-10-11

Output produced will be **52**

**SECTION C**

32 A departmental store Mystore is considering to maintain their inventory using SQL to store the dat. As a database administer, Arun has decided that:         [5]

Name of the database-mystore

Name of the table-STORE

The attributes of STORE are as follows:

Itemno-numeric

Itemname-character of size 20

Scode-numeric

Quantity-numeric

Table: STORE

|  |  |  |  |
| --- | --- | --- | --- |
| Itemno | Itemname | Scode | Qunatity |
| 2005 | Sharpener Classic | 23 | 60 |
| 2003 | Ball Pen 0.25 | 22 | 50 |
| 2002 | Gel Pen Premium | 21 | 150 |
| 2006 | Gel Pen Classic | 21 | 250 |
| 2001 | Eraser Small | 22 | 220 |
| 2004 | Eraser Big | 22 | 110 |
| 2009 | Bal Pen 0.5 | 21 | 180 |

1. Identify the attribute best suitable to be declared as a primary key.
2. Write the degree and cardinality of the sable STORE
3. Insert the following data into the attributes Itemno,Itemname and Scode

 Itemno=2010 , Itemname=”Note book” and Scode=25

1. Arun wants to remove the table STORE from the database Mystore. Which command will he use from the following?

(i) Delete from store; (ii) drop table store;

(iii) drop database mystore; (iv) delete store from mystore;

1. Now Arun wants to display the structure of the table STORE, ie name of the attributes and their respective data types that he has used in the table. Write the query to display the same

Ans (a) itemno

        (b) degree =4 ; cardinality =7

        (c) insert into store ( Itemno,Itemname,Scode) values (2010, “ Note book “, 25);

        (d) (ii) drop table store;

        (e) describe store

33 Ranjan Kumar of Class 12 is writing a program to create a CSV file  “user .csv “which will contain user name and password for some entries. He has written the following code. As a programmer, help him to successfully execute the given task:   [1x5=5]

 import \_\_\_\_\_\_\_\_\_\_\_\_ #line1

 def addcsvfile(username,password):

 f=open(“usercsv”, ‘\_\_\_\_\_\_\_\_\_’) #line2

 newfilewriter= csv.writer(f)

 newfilewriter.writerow([username,passwod])

 f.close()

 def readcsvfile():

 f=open(“usercsv”, ‘r’)

 newfilereader=csv.\_\_\_\_\_\_\_\_\_\_\_ (f) #line3

 for  row in newfilereader:

 print( row[0], row[1])

 F.\_\_\_\_\_\_\_ #line4

 addcsvfile(ägnim”,”123@456”)

 addcsvfile(ärunima”,”aru@nima”)

 addcsvfile( “frieda ”,”myname@frd)

readsvfile() #line5

1. Name the module he should import in Line1
2. In which mode, Ranjan should open the file to add data into the file
3. Fill in the blank in line3 to read the data from csv file.
4. Fill in the blank in line 4 to close the file.
5. Write the output he will obtain while executing line5.

Ans  (a) Line 1 : csv

 Line 2 : a

 Line 3 : reader

 Line 4 : close()

 Line 5 : agnim 123@456

                         arunima aru@nima

           frieda myname@frd

34 Write the outputs of the SQL queries (a) to (c) based on the relations Teacher and Posting given below:            [3]

Table: Teacher

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| T\_id | name | age | Department | date\_of\_join | salary | gender |
| 1 | jugal | 34 | Computer sc | 10/01/2017 | 12000 | m |
| 2 | seema | 31 | History | 24/03/2008 | 20000 | f |
| 3 | sandeep | 32 | Mathematics | 12/12/2016 | 30000 | m |
| 4 | sangeeta | 35 | History | 01/07/2015 | 40000 | f |
| 5 | rakesh | 42 | Mathematics | 05/09/2007 | 25000 | m |
| 6 | shyam | 50 | History | 27/06/2008 | 30000 | m |
| 7 | Shiv om | 44 | Computer sc | 25/02/2017 | 21000 | m |
| 8 | shalakha | 33 | Mathematics | 31/07/2018 | 20000 | f |

Table: Posting

|  |  |  |
| --- | --- | --- |
| P\_id | Department | place |
| 1 | History | agra |
| 2 | Mathematics | raipur |
| 3 | Computer science | delhi |

1. Select department,count(\*) from teacher group by department;
2. Select max(date\_of\_join), min(date\_of\_join) from teacher;
3. Select teacher.name, teacher.department, posting.place from teacher,posting where teacher.department=posting.departemnt and posting.place=”delhi”;

Ans (a)

|  |  |
| --- | --- |
| Department | count(\*) |
| History | 3 |
| Computer sc | 2 |
| Mathematics | 3 |

(b) Max- 31/07/2018 or 2018-07-31 Min-05/09/2007 or 2007-09-05

(c)  **Name department place**

 Jugal Computer Sc delhi

 Shiv om Computer sc delhi

35 Write SQL commands for the following queries (a) to (e) based on the relation Teacher given above:     [1x5=5]

1. To delete the records of teacher whose department is History.
2. Write a query to count the total number of teachers in each department.
3. To list the names of all teachers who are in Mathematics department with their date

 of joining in ascending order

1. To display the anuual salary and age for male teachers only. (Annual salary is

 calculated as salary\*12)

1. To show the name of those teachers whose name last letter is ‘a’

Ans (a) delete from teacher where department=”history”;

(b) select count(\*) from teacher group by department;

(c) select name from teacher where department =”Mathematics” order by date\_of\_join;

(d) select salary\*12 “annual salary” , age from teacher where gender=”m”;

(e) select name from teacher where name like “%a”;

36. Considering the following definition of list Film,    [5]

 FILM=[Fno, Fname, FType]

Write a program in Python having functions to

1. Create a pickled binary file CINEMA.DAT, which stores the details of FILMs. Input the FILM details from the user, as long as the user wants.
2. Search and display all the content in a pickled file CINEMA.DAT, where FType is matching with the value ‘Comedy’

Ans

import pickle

1. def add():

 while True:

 f=open(“CINEMA.dat”, “ab”)

 Fno=int(input(“enter film no”))

 Fname=input(“enter film name”)

 FType=input(“enter film type”)

 pickle.dump([Fno,Fname,FType],f)

 ch=input("enter more(y/n)")

 if(ch=='n'):

 break

 f.close()

1. def SEARCH():

 f=open("CINEMA.dat","rb")

 while True:

 try:

 r=pickle.load(f)

 if(r[2]==”Comedy”):

 print(r)

 except:

 break

 f.close()