BK BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
MID-TERM EXAMINATION 2023-24

INFORMATICS PRACTICES (065)

Class : XI SCIENCE/COMMERCE/ARTS   **Duration : 3 Hrs**
Date   : 13-10-2023   **Max. Marks : 70**
Admission No.:   **Roll No.:**

MARKING SCHEME

General Instructions:

1. This question paper contains three sections, Section A to C.

2. All questions are compulsory.

3. Section A has 18 questions of MCQ and 16 Very Short Answer type questions carrying 01 mark each.

4. Section B has 12 Short Answer type questions carrying 02 marks each.

5. Section C has 04 Long Answer type questions carrying 03 marks each.

6. All programming questions are to be answered using Python Language only.

Section-A

1. Which of the following memory types cannot store the data or information permanently ?   1
    (a) RAM   (b) Cache   (c) Flash Memory (d) Hard disk

2. The ____ mode of Python gives instant result of typed statement.   1
    (a) Interactive mode   (b) Script mode (c) Combination of interactive and script mode
    (d) All of these

3. Data items having fixed value are called ____.   1
    (a) Identifiers   (b) functions   (c) Keywords   **(d) literals**

4. Value 0.000615 is equivalent to: 1
    (a) 615E3   (b) 615E-3   (c) 0.615E3   **(d) 0.615E-3**

5. Which python built-in function returns the unique number assigned to an object ?   1
    (a) identity()   **(b) id()**   (c) refnum()   (d) ref()

6. In Python statement x=a + 5 – b, **a** and **b** are ____.   1
    (a) Operands (b) Expression (c) Operators   (d) Equation

7. An empty / null statement in Python is ____.   1
    (a) go   **(b) pass**   (c) over   (d) ;

8. Function **range(0, 5, 2)** will yield on iterable sequence like   1
    (a) [0, 2, 4]   (b) [1 , 3, 5]   (c) [0, 1, 2, 5]   (d) [0, 5, 2]

9. The order of statement execution in the form of top to bottom, is known as ____ construct.   1
    (a) selection   (b) repetition   **(c) sequence**   (d) flow

10. Which of the following will create an empty list ?   1
    (a) L=[ ]   (b) L= list()   (c) L=list[ ]   (d) L=list(empty)

11. Which of the following can delete an element from a list, if its value is given ?   1
    (a) pop( )   **(b) remove( )**   (c) del   (d) all of these

12. Repetition of data is called data _____.   1
    (a) Dependency   **(b) Redundancy**   (c) Inconsistency   (d) Isolation

13. A _____ is an organized collection of structured data.   1
    (a) Information   (b) File   **(c) Database**   (d) DBMS

14. The query language of a relational database is called _____.   1
    (a) SQL   (b) DDL   (c) DML   (d) TCL

15. Number of attributes in a relation is called _____.   1
    (a) size   **(b) degree**   (c) cardinality   (d) weight

16. Pool of values from where a column draws its value is called _____.   1
    (a) table   (b) attribute   (c) dataset   **(d) domain**

17. What will be the output of 87 // 5 ? [**Note:** // is floor division]   1
    (a) 17   (b) 17.4   (c) 17.0   (d) Option b and c

18. What is the binary number of $(154)_{10}$ Decimal system: 1
    (a) 10011010   (b) 10010010   (c) 100101010   (d) 10110101

19. What is Cache memory ?   1

Ans: It is a special high speed memory that stores the most recently used data in order to speed up the process of instruction execution.

20. What does a cross platform language mean ?   1

Ans: It can run well on variety of platforms like Windows, Linux/Unix, and Macintosh.

21. What will the following code result into ?   1
    n1, n2 = 5,7
    n3= n1+n2
    n4=n3+2
    print(n1, n2, n3, n4)

Ans: n1=5, n2=7, n3=12, n4=14

22. What will be the output of the following statements ?   1
    list1 = [12,32,65,26,80,10]
    list1.sort()
    print(list1)
Ans: [10,12,26,32,65,80]

23. What will be the output of the following statements ?   1
    list1 =[1,2,3,4,5]
    print(list1[len(list1)-1])
Ans: 5

24. If a is [1,2,3,4]   1
    What is the difference between a[1] = 4 and a[-1] = 4 ?

Ans: a[1] will update the second index and a[-1] will update the last index

25. Define Primary Key.   1
Ans: This constraint uniquely identifies each record in a table. Primary keys must contain UNIQUE values, and cannot contain NULL values.

26. Name few RDBMS that is open source and freeware.   1
Ans: MySQL, PostgreSQL etc.,

27. How many primary keys can be defined in a table ?   1

Ans: Only one

28. Name the SQL command to open the database.   1

Ans: Use <database_name>;

29. Mr. Arpit wants to view all the tables in the database. Which SQL command should he use ?   1

Ans: Show tables;

30. Mr. Verma wants to view the structure of a table. Which SQL command should he use ?   1

Ans: Desc or describe table_name;

31. Consider the table with structure as :   1
    Student (ID, name, dept_name, tot_cred)
    In the above table, which attribute will form the primary key ?

Ans: ID

Write SQL commands for the following on the basis of given table SPORTS :
Table : SPORTS

StudentNo	Class	Name	Game	Grade
10	7	Sameer	Cricket	B
11	8	Sujit	Tennis	A
12	7	Kamal	Swimming	B
13	7	Venna	Tennis	A
14	9	Archana	Basketball	A
15	10	Arpit	Cricket	A

32. (i) Display the name of those students who have grade **'A'** .   1
33. (ii) Display name and class of those students who are game **'Cricket'**.   1
34. (iii) Display the name of those students whose name starts with a letter **'A'**;   1

Ans: (i) Select name from SPORTS where grade='A';
    (ii) Select name, class from SPORTS where name='Cricket';
    (iii) Select name from SPORTS where name like 'A%';

Section-B

35. Differentiate between Proprietary software and Free software.   2

Ans: A proprietary software only defends the interests of the company that markets it and it cannot be modified by outsiders to satisfy particular needs. Instead, free or open software is accessible to everyone and can be modified to respond to the requirements of each individual.

36. 'Python is an interpreted high level language'. What does it mean to you ?   2

Ans: Since it deploys an interpreter to turn your code into a language that your computer's processor can comprehend. One of the most appealing features of interpreted languages is that they are platform agnostic.

37. "Comments are useful and easy way to enhance readability and understandability of a program." Elaborate with examples.   2

Ans: To explain the purpose of the program, document the logic of a piece of code, describe the behaviour of a program, etc. This enhances the readability and understandability of a program.
    For example: # This program shows a program's components

38. Why are logical errors harder to locate ?   2

Ans: Logical errors are not detected by the complier. It might go unnoticed as it might fail only in certain scenarios. This is why logical errors are hard to detect.

39. Write a program in python that accept three numbers and determine the largest and smallest number.   2

Ans:
```
number1 = int(input('Enter First number : '))
number2 = int(input('Enter Second number : '))
number3 = int(input('Enter Third number : '))
def largest(num1, num2, num3):
    if (num1 > num2) and (num1 > num3):
        largest_num = num1
    elif (num2 > num1) and (num2 > num3):
        largest_num = num2
    else:
        largest_num = num3
    print("The largest of the 3 numbers is : ", largest_num)
def smallest(num1, num2, num3):
    if (num1 < num2) and (num1 < num3):
        smallest_num = num1
    elif (num2 < num1) and (num2 < num3):
        smallest_num = num2
    else:
        smallest_num = num3
    print("The smallest of the 3 numbers is : ", smallest_num)

largest(number1, number2, number3)
smallest(number1, number2, number3)
```

40. Write a program in python that takes name and age of the user as input and displays a message whether the user is eligible to apply for a driving license or not.   2
(the eligible age is 18 years).

Ans:
```
#Program to check the eligibility for driving license
name = input("What is your name? ")
age = int(input("What is your age? "))

#Checking the age and displaying the message accordingly
if age >= 18:
    print("You are eligible to apply for the driving license.")
else:
    print("You are not eligible to apply for the driving license.")
```

41. What is a statement in Python ? What is the significance of an empty statement ?   2

Ans: It is an instruction given to the computer to perform any kind of action. An empty statement is useful in situations where the code requires a statement but does not require logic. To fill these two requirements simultaneously an empty statement is used.

42. What is the difference between append() and extend() function ? Give example.   2

Ans: Append() and extend() are two built-in list functions generally used to add elements, tuples, etc into any given list.
Eg., List1=[1,2,3] List1.append(4) List1=[1,2,3,4]
In append() we add a single element to the end of a list. In extend() we add multiple elements to a list.
Eg., List1=[1,2,3] List1.extend([4,5,6]) List1=[1,2,3,4,5,6]

43. Write a program in python to create a list of number and then find the sum of elements of the list. 2

Ans:
```
l=eval(input("Enter a list of numbers"))
# [4,7,9,10,45,21,46,67,23] --- input
sum=0
for i in range(len(l)):
    sum=sum+i
print("The list is",l)
print("The sum of all the elements in a list is".sum)
```

44. How are SQL commands classified ? Give example 2

Ans: These SQL commands are mainly categorized into four categories:
DDL – Data Definition Language Example Create Alter Drop
DML – Data Manipulation Language Example: Insert, Select, Update, Delete
DCL – Data Control Language Example: Grant Revoke
TCL – Transaction Control Language: Commit, Rollback, Savepoint

45. Differentiate between CHAR and VARCHAR datatype in SQL. 2

Ans: The CHAR data type is fixed in length, while the VARCHAR data type supports variable-length columns of data. But they are also similar. They both can store alphanumeric data.

46. Ms Alka wants to add a new column in table **BOOK**. Help her to do the same. 2
The detail is given :column name: ISBN
datatype: integer
size: 13
Constraint : Not Null

Ans: Alter table BOOK add ISBN int(13) not null;

Section-C

47. What are mutable and Immutable types ? List immutable and mutable data types of Python. 3

Ans: List, Sets, and Dictionary in Python are examples of some mutable data types in Python.
Mutable data types are those whose values can be changed or new values can be assigned to them.
Immutable data types are those, whose values cannot be modified once they are created.
Examples of immutable data types are int, str, bool, float, tuple, etc.

48. Write a python program using any loop to display pattern as given below: 3
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

Ans   rows = 5
       for i in range(1, rows + 1):
         for j in range(1, i + 1):
            print(j, end=' ')
         print('')

49.   Create a **MENU driven** program in python where user will have the freedom to create a list of   3
       integers and will also be able to add, remove and view all the elements.

Ans: print("1-Create a list")
       print("2-View list")
       print("3-Add new element")
       print("4-Remove an element")
       print("5- Exit the Menu")
       ch=input("Enter your choice :")
       if ch=='1':
         list1=eval(input("Enter a list of integers:"))
       if ch=='2':
         print("The list of integers is ",list1)
       if ch=='3':
         res=input("Want to add an element ?")
         if res=='y' or res='Y':
            new=int(input("Enter new element:"))
            list1.append(new)
         else:
            pass
       if ch=='4':
         rem=int(input("Enter an element to be removed:"))
         list1.remove(rem)
       if ch=='5':
         print("Bye ! Thank You.)

50.   Write a SQL command to create a table of the given structure: 3
       Table Name: **STUDENT**

Field Name	Data Type	Size	Constraint
Admno	Integer	7	Primary Key
First Name	Varchar	30	Not Null
Last Name	Varchar	30	Null
Class	Char	3	Not Null
Contact No	Varchar	11	Null

Ans: Create table STUDENT (admno int(7) primary key, fname varchar(30) not null,
       lname varchar(30) null, class char(3) not null, contact_no varchar(11));

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