

**Annual Examination, 2020-2021**  
**Informatics Practices (Theory)**

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**Grade: 11**  
**Date: 18.02. 2021**

**Time allowed: 3 hours**  
**Maximum Marks: 70**

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**General Instructions:**

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
  - a. Section – I is short answer questions, to be answered in one word or one line.
  - b. Section – II has two case studies questions. Each case study has 4 case-based sub- parts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
  - a. Section-I is short answer questions of 2 marks each in which two questions have internal options.
  - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
  - c. Section-III is very long answer questions of 5 marks each in which one question has question has internal option.

**Part A**

**Section – I**

**Attempt any 15 questions from questions 1 to 21**

- 1      **State whether the following statements are True or False:**      1
- i) Operating System is an interface between the user and the computer and controls the hardware and software of the computer system. \_\_\_\_\_
  - ii) In FOSS source code is usually hidden from the users. \_\_\_\_\_
- 2      **Fill in the blanks:**      1
- Which data type will be used to represent the following data values in Python?
- i)      Volume of sphere
  - ii)     Mobile number

- 3 **Find the output of the following program segments:** 1
- i) for i in range (20,30,2) :  
print (i)
- 4 **Give the output of the following when num1=4, num2=3, num3=2.** 1
- i) num1 += num2 + num3
5. **What will be the output of the following statements?** 1
- i) List1=[12,43,2,56,78]  
List1.sort( )  
Print (List1)
- 6 List any two cloud-based services that you are using at present. 1
- 7 **Expand: SaaS** 1
- 8 **Fill in the blanks:** 1
- \_\_\_\_\_ allows a user to look at, explore, and interact with virtual surroundings, just like one can do in the real world.
- 9 Name the device that is capable of carrying out one or more tasks automatically with accuracy and precision. 1
- 10 Convert the following into bytes: 1
- i) 2 MB
- 11 Identify the category (system / application / programming tool) of the following software: 1
- i) Ubuntu
- 12 Name the Output device used to do the following: 1
- i) To build 3D models
- 13 Name the device which is a network of devices that have an embedded hardware and software used to connect and exchange data with other devices on the same network. 1
- 14 What is MySQL? 1
- 15 Expand : RDBMS 1
- 16 An attribute A of datatype varchar(20) has the value "Amit" . The attribute B of datatype char(20) has value "Karanita" . How many characters are occupied in attribute A ? How many characters are occupied in attribute B? 1
- 17 What is a Tuple? 1
- 18 Define **Degree** of a Table. 1
- 19 **Choose the correct option:** 1

The symbol ( \* ) in a select query retrieves \_\_\_\_\_ .

- i) All data from the table
- ii) Data of primary key only
- iii) NULL data

20 Name the SQL commands used to : 1

- i) Display the structure of a table "SPORTS".

21 Rewrite the following SQL statement after correcting error(s). Underline the corrections made. 1

INSERT IN EMP(EMPNO, SALES) VALUE (100, 20078.50);

### Section – II

**Both the case study based questions (22 & 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark.**

22 Consider the following dictionary stateCapital:

```
stateCapital = {"Assam": "Guwahati",  
"Bihar": "Patna", "Maharashtra": "Mumbai", "Rajasthan": "Jaipur"}
```

Find the output of the following statements:

- i) print(stateCapital.get("Bihar")) 1
- ii) print(stateCapital.keys()) 1
- iii) print(stateCapital.values()) 1
- iv) print(stateCapital.items()) 1
- v) print(len(stateCapital)) 1

23 Write the following SQL commands on the basis of table "Class".

ROLLNO	NAME	STIPEND	SUBJECT	AVGMARK	GRADE
1	VIKAS	1200	MEDICAL	67	B
2	BOBY	1400	HUMANITIES	78.8	B
3	TARUN	1000	MEDICAL	64.8	C
4	VARUN	1600	NON-MEDICAL	84	A
5	ATUL	1800	NON-MEDICAL	90	A

- i) Display names of all **Non-Medical** stream students from the table **Class**. 1
- ii) Display all the records where **grade** is B or C. 1
- iii) Display those records whose **average mark** in between 70 to 90 1
- iv) Insert a new row with the following data (06, 'MITHUN', 1300, 'HUMANITIES', 1 1

'98','A')

- v) Display all records in Descending order of Name wise. 1

**Part – B**  
**Section – I**

- 24 Consider a list: 2

**list1 = [6,7,8,9]**

What will be the output of the following operations on list1?

**a) list1 \* 2**

Consider a list:

**list1 = [1,2,3,4,5,6,7,8,9,10]**

What will be the output of the following operations on list1?

**b) list1 [ : : -2 ]**

- 25 What will be the output of the following code segment? 2

```
myList = [1,2,3,4,5,6,7,8,9,10]
del myList[3:]
print(myList)
```

- 26 Consider the following list myList. What will be the elements of myList after each of the following operations? 2

myList = [10,20,30,40]

- a) myList.append([50,60])
- b) myList.extend([80,90])

- 27 Create a Python program to calculate Profit-Loss for given cost and selling price. 2

- 28 Draw a block diagram of a computer system and label each part. 2

- 29 Mention any four characteristics of Big Data. 2

OR

What is mean by Artificial Intelligence?

- 30 List four commonly used Database Management System application software. 2

- 31 What is a Query? 2

- 32 Define the following: 2

i) Primary key

ii) Foreign key

- 33 What is the difference between CHAR and VARCHAR datatype in MySQL. 2

**Section – II**

- 34 Create a Python program to find the largest and smallest numbers in a list. 3
- 35 **Define the following terms:** 3
- i) Sensors
- j) Robotics
- 36 Create a Python program to find the sum of squares of the first 100 Natural numbers 3
- 37 Write an SQL query to create the table 'Menu' with the following structure: 3

Field	Type	Constraint
ItemCode	Varchar(5)	Primary Key
ItemName	Varchar(20)	
Category	Varchar(20)	
Price	Decimal(5,2)	

### Section - III

- 38 Predict the Output for the following (i), (ii), (iii) & (iv) and write the Python code for (v). 5
- i. #list2 is the list of vowels  
list2 = ['a','e','i','o','u']  
print(list2)
- ii. #initialing a list named list1  
list1 = [2,4,6,8,10,12]  
print( list1[0] )
- iii. # list1 of colors  
list1 = ['Red','Green','Blue','Orange']  
list1[3] = 'Black'  
print(list1)
- iv. list1 = ['Red','Green','Blue']  
print('Green' in list1)
- v. Consider the list,  
list1=['Red','Green','Blue','Cyan', 'Magenta','Yellow','Black']  
**Output is:**  
['Blue', 'Cyan', 'Magenta', 'Yellow']
- Write the Python code to get the above Output (v).

39 Observe the given table “Person” carefully and answer the following questions: 5

PanNo	Name	Phoneno	Address
CIZPW123A	Rajesh Kumar	9599123456	WZ11 – Rajouri Garden, Delhi
ABWQ2341B	Hemant Kumar	9812345678	Modern Apartments, Pitampura, Delhi
DERA9786T	Naveen Sharma	7868654235	CA 22, Sector 21 Rohini, Delhi
PARD3457L	Sourabh Verma	8933217645	JD 61, Sector 20, Gurgaon
GDTF8762P	Nishant Kumar	NULL	Modern Apartments, Pitampura, Delhi
MERT2376G	Hemant Kumar	9811110891	F40, Sector 19, Rohini, Delhi

- Name the column that might have a Primary Key constraint. Justify your answer.
- Name the column that might have a Unique constraint. Justify your answer.
- Write a query to add a new column (Salary int(5) not null) to the Person table.

**OR**

Consider the following table named “Garment”.

Table : GARMENT

GCODE	GNAME	SIZE	COLOUR	PRICE
111	TShirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Top	L	Pink	1200.00

- Write SQL command to change the colour of garment with code as 116 to “Orange”.
- Write SQL command to increase the price of all XL garments by 10%.
- Write SQL command to delete the record with GCode “116”.

- 40 Write a Python program to calculate average marks of **5** subjects and display the result. 5

**OR**

Write a Python program to print the highest and lowest values in the dictionary, 'Student\_dict'.

```
student_dict={'Rahul':98,'Bala':43,'Veal':67,'Kevin':76,'Omar':100 }
```