

GULF SAHODAYA EXAMINATION (SAUDI CHAPTER) – FEBRUARY 2021

INFORMATICS PRACTICES - XI

Max. Marks: 70

Duration: 3 Hrs

General Instructions:

- *This question paper contains two parts A and B. Each part is compulsory.*
- *Both part A and Part B have choices.*
- *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.*
- *Part-B is Descriptive Paper.*
- *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 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 internal option.*

Part-A

Section-I

Attempt any 15 questions from question 1-21

- 1) Binary number system has digits as _____ and _____. [1]
- 2) When power is switched OFF and data which is not saved is lost forever, such type of memory is classified as: [1]
 - a) Volatile
 - b) Non-volatile
 - c) Impact
 - d) Non-Impact
- 3) Name the three sub-units that make the CPU? [1]
- 4) 1 TB is equivalent to _____ [1]
 - a) 2^{10} bytes
 - b) 2^{10} MB
 - c) 2^{10} GB
 - d) 2^{10} KB
- 5) State whether the following statement is True or False. [1]
Python is a cross-platform language
- 6) The interactive interpreter of Python is termed as _____ [1]
- 7) Name any one immutable data type and one mutable data type. [1]
- 8) What are the values produced by range(8,-4,-3). [1]
- 9) What will be produced by $a*3$ and $a+3$, if $a=[1,2,3,4]$ [1]

- 10) Identify the relational operator from the following: [1]
a) and
b) –
c) <
d) +=
- 11) What will be the output of print(d.len()), consider d={ 1:'One',2:'Two',3:'Three'} [1]
- 12) Single line comments in Python begin with _____ symbol. [1]
a) #
b) “
c) ‘
d) %
- 13) Which keyword is used for searching null? [1]
a) Like
b) Is
c) =
d) As
- 14) Consider the table has 4 tuples and 7 attributes. What is its degree and cardinality. [1]
- 15) Which keyword eliminates the duplicate entry in the output? [1]
- 16) Identify the DML command. [1]
a) CREATE
b) INSERT
c) ALTER
d) DROP
- 17) Write the MySQL command to create the database “Exam” and make it active. [1]
- 18) Which of the following keys help to make relationship between two tables? [1]
a) Primary key
b) Candidate key
c) Foreign key
d) Alternate key
- 19) Suggest the suitable data types to store the following details in MySQL table: date of birth and marks. [1]
- 20) NLP is a branch of AI that facilitates _____ between humans and computers. [1]
- 21) State True or False. [1]
Smart cities are not sustainable and livable.

Section – II

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

- 22) Answer any **four** questions from (i) to (v)
- (i) Evaluate the following expressions, given that s1= “spam’s”, s2= “ni!” [1]
a) s1[3:]+s2[:3]
b) s2[:: -1]

- (ii) Write the corresponding python expression for the following mathematical expression. [1]

a)
$$\frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

b)
$$(\cos x / \tan x) + x$$

- (iii) What will be sizes of the following constants: [1]

a) '\a'

b) "XYZ\
ABC\
DEF"

- (iv) What will be the output of the following code? [1]

```
d={1:'One',2:'Two',3:'Three'}  
print(d.keys())
```

- (v) What will be the output of the following code? [1]

```
d= {1:'One',2:'Two',3:'Three'}  
print('One' in d)
```

- 23) In a company, many products and its supplier details are stored in different tables. A database named "COMPANY" is created. One table in that database is SUPPLIER, which is given below.

SNo	PName	SName	Qty	Price	City
S1	Bread	Britannia	150	8.00	Delhi
S2	Cake	Britannia	250	20.00	Mumbai
S3	Coffee	Nescafe	170	45.00	Mumbai
S4	Chocolate	Amul	380	10.00	Delhi
S5	Sauce	Kissan	470	36.00	Jaipur

Answer any **four** questions from (i) to (v)

- (i) Which attribute can be chosen as a primary key? [1]
- (ii) Write three suitable attributes of another table "PRODUCT" and identify Primary key and foreign key in that table that you could expect. [1]
- (iii) Write MySQL command to add one more column "PCODE" with data type number in the table SUPPLIER. [1]
- (iv) What will be the output of the following MySQL query [1]
SELECT PName, SName from SUPPLIER where Price between 10 and 20;
- (v) Write MySQL command to increase the quantity (Qty) of all items by 50. [1]

Part – B

Section – I

- 24) Explain any four functions of control unit. [2]
- 25) Differentiate between primary memory and secondary memory. [2]

OR

Differentiate between compiler and interpreter.

- 26) What do you mean by dynamic typing? Explain with example. [2]

- 27) Rewrite the code after removing errors with each correction underlined. [2]
- ```

a, b=10
c==30
z="Python"
d=+a/c*b
z[1]= "r"
Print("The values are",a,b,c,d)

```
- 28) What will be the output of the following python code snippet? [2]
- ```

sum=0
for i in range(0,9,2):
    if i%4==0:
        sum=sum+i
print(sum)

```
- OR
- Find out the output of the following questions.
- 5//2
 - 100%231
 - 7>3 and 2<5
 - 'a' or 'j'
- 29) Write MySQL command to create the table WORKSHOP with given constraints. [2]
- | COLUMN_NAME | DATATYPE(SIZE) | CONSTRAINT |
|--------------|----------------|-------------|
| WorkshopId | integer | Primary key |
| Title | varchar(50) | |
| dateWorkshop | date | |
| NumSpeakers | integer | |
- 30) Differentiate between update and alter with neat example. [2]
- OR
- Differentiate between char and varchar.
- 31) Answer the following questions. [2]
- Abhinav, a student of class XI, created a table "RESULT". Grade is one of the columns of that table. To find the details of students whose Grades have not been entered, he wrote the query, which did not give the desired result. Write the correct MySQL query to get the answer.
 - Write the query to remove the structure of the table, all the data in the table and the constraints associated with the table SCHEDULE.
- 32) Answer the following questions. [2]
- Write the alternate statement of the given MySQL query.
SELECT * FROM STUDENT WHERE MARKS NOT BETWEEN 70 AND 90;
 - Charvi is inserting "Sharma" in the "LastName" column of the "Emp" table. She has written the following query. However it has errors. Write the correct statement.
INSERT INTO EMP(SHARMA) VALUE(LASTNAME);
- 33) Explain the areas where Natural Language Processing (NLP) is used extensively. [2]

Section – II

- 34) Answer the following questions: [3]
i. Define application software.
ii. Explain utility software.
- 35) Write a python program to print the three numbers in ascending order. [3]
OR
Write a python program to find the average of list of elements.
- 36) Define the term key. Explain types of keys in MySQL with example. [3]
- 37) Explain any two applications of AI with example. [3]
OR
What is big data? Explain its characteristics neatly.

Section – III

- 38) Answer the following questions. Consider the following Python program: [5]

```
N=int(input("Enter N:"))
sum=0
for i in range(1,N+1):
    if i%2==0:
        sum=sum+i
print(sum)
```

a) What will be printed by sum when N is 10?
b) What will be printed by sum when N is 0?
c) How many times loop will execute when N is 5?

39) Consider the following table named "EXAM" with details of marks. Write command of MySQL for (i) to (v). [5]

Table: EXAM

Adno	SName	Percentage	Clsection	Stream
R001	Sushant	90.2	12A	Science
R002	Vaidyanath	80.5	12B	Humanities
R003	Miara	68.9	12B	Science
R004	Niara	96.0	12A	Commerce
R005	Shinjini	88.9	12D	Commerce

- i. To display all information of the students of humanities.
ii. To display Adno, Name and Percentage of students who are studying in Science in ascending order of percentage.
iii. To change the attribute name SName into studentname.
iv. Display the details of students whose name contains 'IA' anywhere.
v. Display the names of commerce students who got above 70%.

OR

Consider the following table PRODUCT

P_ID	ProductName	Manufacturer	Price	Discount
1001	Talcum Powder	LAK	40	
1005	Face Wash	ABC	45	5
1007	Bath Soap	ABC	55	
1012	Shampoo	XYZ	120	10
1022	Face Wash	XYZ	95	

- i. Display the details of all items whose discount is not mentioned.
- ii. Display the names of items which contain 'wash' anywhere.
- iii. Display the details of products of XYZ in descending order of price.
- iv. Display the name and manufacturer details of items whose price between 40 to 70.
- v. Increase the price of items whose P_ID is 1001 or 1012 by 10%.

40) Write output for the following MySQL queries with respect to the table EXAM [5]
given in Q.No. 39.

- i. SELECT DISTINCT STREAM FROM EXAM;
- ii. SELECT * FROM EXAM WHERE ADNO IN('R001','R003','R005');
- iii. SELECT SNAME, STREAM FROM EXAM WHERE PERCENTAGE BETWEEN 80 AND 90;
- iv. SELECT STREAM FROM EXAM WHERE PERCENTAGE IS NOT NULL;
- v. SELECT * FROM EXAM WHERE CLSECTION='12A' AND PERCENTAGE>80;
