Roll No. | | | | | |

INDIAN SCHOOL SALALAH

FIRST TERM EXAMINATION – SEPTEMBER 2024

INFORMATICS PRACTICES -065

Class: XII **Date: 30.09.2024**

Time: 3 HRS **Maximum Marks: 70**

General Instructions:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A has 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 02 questions carrying 04 marks each.
7. Section E has 03 questions carrying 05 marks each.
8. All programming questions are to be answered using Python Language only

	SECTION A (1-18)	
01	Which statement is used to display a graph using pyplot functions in Matplotlib? (a) plt.show() (b) plt.display() (c) plt.print() (d) plt.saveimage()	1
02	Find the output of the following SQL command. SELECT POWER (5,5); (a) 625 (b) 125 (c) 25 (d) 3125	1
03	_____is not a network device. (a) Router (b) Gateway (c) Bridge (d) Bus Topology	1
04	Karan wanted to see all the values of a Series 'school', which statement(s) will do it? (a) school[0:] (b) school[:] (c) school.all (d) Both (a) and (b)	1
05	What is full form of CSV_____ (a) Comma Separated Values (b) Common Separated Values (c) Common Seeking Values (d) None of these	1

06	Which of the following commands is not a data manipulation command? (a) SELECT (b) INSERT (c) UPDATE (d) ALTER	1
07	In networking, which device is primarily responsible for amplifying or regenerating signals to maintain signal strength over long distances? (a) Repeater (b) Router (c) Bridge (d) None of the above	1
08	Find the output of the following SQL command. Select upper(substr('Informatics Practices',3,5)); (a) FORM (b) FORMA (c) FORMAT (d) None of these	1
09	import pandas as pd Sr1=pd.Series([10,20,30,40,50]) Sr2=pd.Series([10,20,30]) what will be the output of Sr1+Sr2 (a) 0 20 1 40 2 60 3 NaN 4 NaN dtype:int64 (b) 0 20.0 1 40.0 2 60.0 3 NaN 4 NaN dtype:float64 (c) 0 10 1 20 2 30 3 40 4 50 dtype:int64 (d) 0 20 1 40 2 60 3 40NaN 4 50NaN dtype:object	1
10	Which function in Matplotlib is used to add a descriptive text at the top of a graph? (a) plt.heading() (b) plt.label() (c) plt.caption() (d) plt.title()	1
11	Which of the following device modulates and demodulates signals to enable internet access over phone lines? (a) Router (b) HUB (c) MODEM (d) Gateway	1
12	Predict the output of the given MySQL query Select round (458.256,-2); (a) 500 (b) 460 (c) 400 (d) 490	1
13	This is the type of chart for numeric data that group the data into bins. (a) Line Graph (c) Bar Graph (b) Histogram (d) All of these	1
14	Find out which MySQL query will not provide the output if table name is EMP and salary, designation and name are the attributes of the table EMP. (a) Select * from emp where salary>50000; (b) Select * from emp where designation in ('Manager','Sales'); (c) Select * from emp where name =NULL; (d) Select * from emp order by name AND designation='Manager';	1

<table>
<tr><td>15</td><td>What will be the output of the given python code
import pandas as pd
s1=pd.Series([10,20,30])
s1*2
(a) 0 20
1 40
2 60
dtype: int64
(b) 0 10
1 20
2 30
3 10
4 20
5 30
dtype: int64
(c) 0 10
1 20
2 30
0 10
1 20
2 30
dtype: int64
(d) None of these</td><td>1</td></tr>
<tr><td>16</td><td>A DataFrame is created by a dictionary carrying 3 keys and 4 values against each of the keys. _____ columns will be there in the DataFrame.
(a) 2
(b) 1
(c) 3
(d) 4</td><td>1</td></tr>
<tr><td colspan="3">Q17 and 18 are ASSERTION AND REASONING 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</td></tr>
<tr><td>17</td><td>Assertion (A) head () is used to display first 5 records of any Series or DataFrame.
Reason (R) tail() It displays the last 5 records of any Series or DataFrame.</td><td>1</td></tr>
<tr><td>18</td><td>Assertion (A) DataFrame is mutable in nature and size.
Reason (R) You can modify its contents and change its size after creation.</td><td>1</td></tr>
<tr><td colspan="3">SECTION B
(19-25)</td></tr>
<tr><td>19</td><td>Why Star topology generally more expensive compared to bus topology, but still considered the best option for network design?
OR
Write the difference between LAN and MAN</td><td>2</td></tr>
<tr><td>20</td><td>Make a table ‘student’ in MySQL as given the instructions
<table><tr><td>Roll_No</td><td>Int (Primary Key)</td></tr><tr><td>Name</td><td>Varchar (20)</td></tr><tr><td>Class_Section</td><td>Varchar (10) NOT NULL</td></tr><tr><td>Stream</td><td>Varchar (20)</td></tr></table></td><td>2</td></tr>
<tr><td>21</td><td>Write the full forms of the given
a) HTTP
b) POP
c) SMTP
d) WWW</td><td>2</td></tr>
<tr><td>22</td><td>Write the code in python as per the given instructions from the dataframe DF
<table><tr><td></td><td>BookName</td><td>BookPrice</td><td>BookPublisher</td></tr><tr><td>1001</td><td>Java</td><td>255</td><td>ABC Pvt LTD</td></tr><tr><td>1002</td><td>Python with MySQL</td><td>455</td><td>ABC Pvt LTD</td></tr><tr><td>1003</td><td>Smart Networking</td><td>425</td><td>Ratan Pvt LTD</td></tr><tr><td>1004</td><td>Basic in C#</td><td>625</td><td>Birla Pvt LTD</td></tr></table>(a) Display the details of BookName and BookPublisher
(b) Change the price of ‘Basic in C#’ as 550</td><td>2</td></tr>
</table>

23 (2)

Consider the table EMP in MySQL as given below write the query as per the instructions.

Emp_No	Emp_Name	Emp_Salary	Emp_Designation
1001	AADIDEV	57500	Asst Manager
1002	SADGA	59500	Asst Manager
1003	ADITHYA ANISH	56500	Manager
1004	ALQAMA	57500	Manager
1005	ANEETTA ABRAHAM	58500	Gen Manager
1006	ANNLITTA MARIAM	60000	Gen Manager

(a) Increase the salary of 5% of each employee.
(b) Display the table in ascending order by the name

24 (2)

Write the code in python as per the given instructions from the dataframe DF

	BookName	BookPrice	BookPublisher
1001	Java	255	ABC Pvt LTD
1002	Python with MySQL	455	ABC Pvt LTD
1003	Smart Networking	425	Ratan Pvt LTD
1004	Basic in C#	625	Birla Pvt LTD

(a) Display the total number of elements and dimension of the dataframe.
(b) Add one more row as [1005,'Basic Computer Organization',750,'ABC Pvt LTD'].

25 (2)

Find the output of the following python code:

```
import pandas as pd
computer=pd.Series([100,150,75,200], index=['Keyboard','Mouse','Scanner','Joystick'])
print(computer[1:3])
```

SECTION C
(26-30)

26 (3)

Consider the table SPORTS in MySQL as given below write the output as per given query.

ID	SNAME	FEES	DOJ
1001	MOHAMMED SHAZIN SHAFEER	1500	2022-10-05
1002	MUHAMMAD HAIDER ALI	1800	2024-11-30
1003	NAAJI WILDAN	1450	2020-09-25
1004	NOYAL JEMINI	2500	2019-12-12
1005	NUAIMA FARZEEN SYED ASIF	2500	2018-10-15

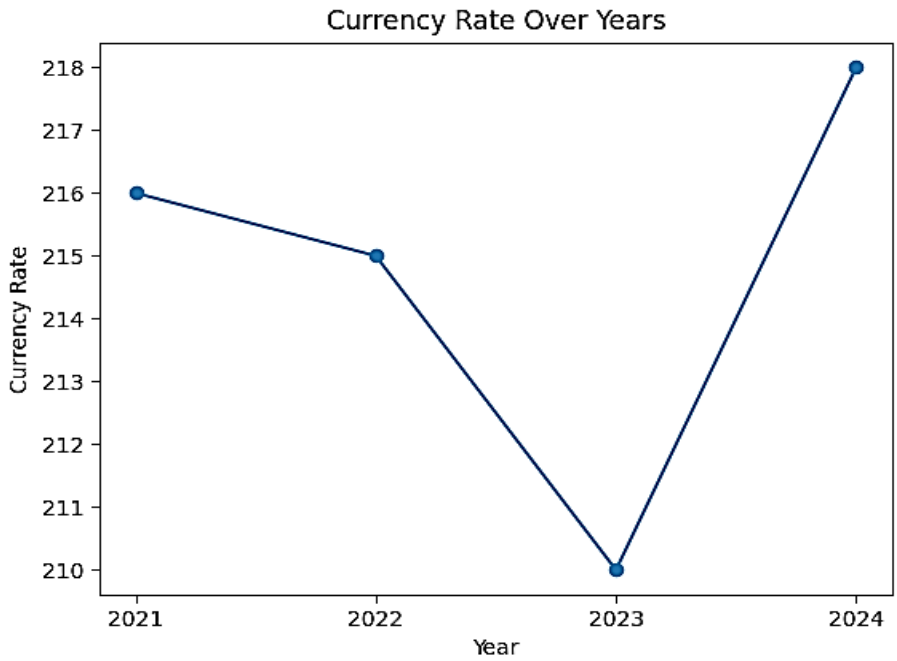
(a) Select lcase(left(sname,3)) from SPORTS where fees>1800;
(b) Select mod(month(doj),3) from SPORTS;
(c) Select max(doj) from SPORTS;

27 (3)

Write the code in python as per the given instructions from the dataframe DF

	BookName	BookPrice	BookPublisher
1001	Java	255	ABC Pvt LTD
1002	Python with MySQL	455	ABC Pvt LTD
1003	Smart Networking	425	Ratan Pvt LTD
1004	Basic in C#	625	Birla Pvt LTD

(a) Display the BookName and BookPrice whose price is more than 300 and BookPublisher is Ratan Pvt LTD
(b) What will be the output of the statement *df.iloc[[0,2],[1,2]]*
(c) Change the index as [1001,1002,1003,1004] to ['B001', 'B002', 'B003','B004']

28	What is the advantage of using switch over hub Or List two differences between a website and a web page with example	3
29	Draw the line graph using matplotlib in python as given below with proper title, x -axis and y- axis as given in the figure.  	3
30	Find the output of the given queries in MySQL (a) Select instr('Informatics Practices','mat'); (b) Select ltrim(' Computer Science '); (c) Select monthname(now()); (d) Select length('Indian School Salalah'); (e) Select trim(' Informatics Practices '); (f) Select right('Indian School Salalah',3);	3
SECTION D (31-32)		
31	Create the given dataframe and write the code as given statements. Name S1 S2 S3 S4 S5 0 Aarav Sharma 96 89 57 66 50 1 Anaya Singh 90 51 68 51 57 2 Vivaan Gupta 100 50 90 54 59 3 Diya Mehta 66 83 73 69 59 4 Aditya Patel 65 97 78 65 70 (a) Display the mark details (all the subject) of Vivaan Gupta (b) Change the column index as Student_Name, sub1, sub2, sub3, sub4 and sub5	4
32	Consider the given EMP table and write the query as given below	4

EMPNO	ENAME	GEN	DOJ	DEPT_CODE
1001	EMMANUAL PONCY	M	2022-10-12	D001
1005	EVELYN KUNNEL	F	2021-05-25	D002
1003	FATIMA ARSHED	F	2020-06-06	D001
1002	FIDA FATHIMA	F	2020-04-06	D003
1004	GAUTHAM HELBIT	M	2019-10-30	D005

(a) To display EMPNO, ENAME, GEN from the table EMP in descending order of EMPNO.
(b) To display the records of all female employee from the table EMP.
(c) To display the EMPNO and ENAME of those employees from the table EMP who are joined between 2019- 01-01 and 2021-01-01.
(d) To count the number of male employees who have join before '2022-01-01'.

SECTION E
(33-35)

33

Consider two table as given below, and write queries as per the given instructions.

EMP

Emp_id	emp_name	dept_id
1	Annlitta	101
2	Ayush	102
3	Fida	101
4	David	104
5	Gowri	103

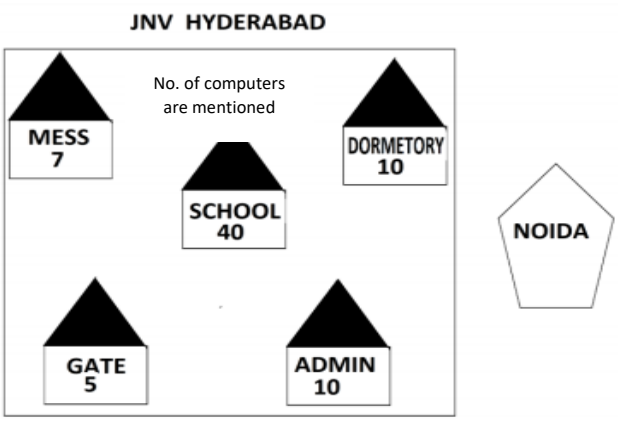
DEPT

dept_id	dept_name	Salary
101	HR	50000
102	IT	65500
103	Finance	48500
104	Marketing	47500

(a) Find the names of employees and the names of their respective departments.
(b) List all employees' details who is/are working in IT department.
(c) Display the dept_name of David
(d) Find the number of employees in each department
(e) Display the department which pays the highest salary

5

34



Distance between various wings	
Between Wings	**Distance**
MESS TO SCHOOL	60
MESS TO DORMETORY	110
MESS TO GATE	65
MESS TO ADMIN	130
SCHOOL TO DORMETORY	40
SCHOOL TO GATE	50
SCHOOL TO ADMIN	68
DORMETORY TO GATE	115
DORMETORY TO ADMIN	100
GATE TO ADMIN	65

(a) Name the most suitable wing where the Server should be installed. Justify your answer.
(b) Draw the cable layout to efficiently connect various wings JNV, HYDERABAD and also write the topology name.
(c) Suggest of placement of Repeater and Hub with reason
(d) Suggest a device and the protocol that shall be needed to provide wireless Internet access to all smartphone/laptop users in the campus of JNV, Hyderabad
(e) School is having plan to open another branch in NOIDA which is 1500km from Hyderabad. Which way we will be able to connect justify your answer
- ✓ LAN
- ✓ MAN
- ✓ WAN
- ✓ PAN

5

35	Karan and Aadidev both are working in STUDENTS table in MySQL, but they are not able to solve the given queries, help them to find the correct queries. **ID** | **Name** | **GradeLevel** | **Subject** | **Score** 1001 | Renin | 12 | Math | 85 1002 | Alqama | 11 | Science | 78 1003 | Afiya | 11 | Math | 90 1004 | Noyal | 12 | Science | 88 1005 | Ardra | 11 | Math | 95 1006 | Aviril | 12 | Science | 92 1007 | Fathima | 11 | Science | 80 1008 | Ann | 12 | Math | 82 1009 | Gokul | 12 | Science | 85 1010 | Eishrat | 11 | Math | 87 (a) Find the heighest marks in each subject. (b) Find the number of students who opted math in GradeLevel 12 (c) Increase 2 marks of each students who opted science in Grade Level 11 and scored less than 80 (d) Display first 3 character from name and last 2 character from subject whose name starts from 'A' (e) Remove all the records from the table STUDENTS.	5