

**ARMY PUBLIC SCHOOL KOLKATA**  
**Class XII**  
**PRE BOARD EXAMINATION**  
**INFORMATICS PRACTICES (065)**

**Max Marks: 70**

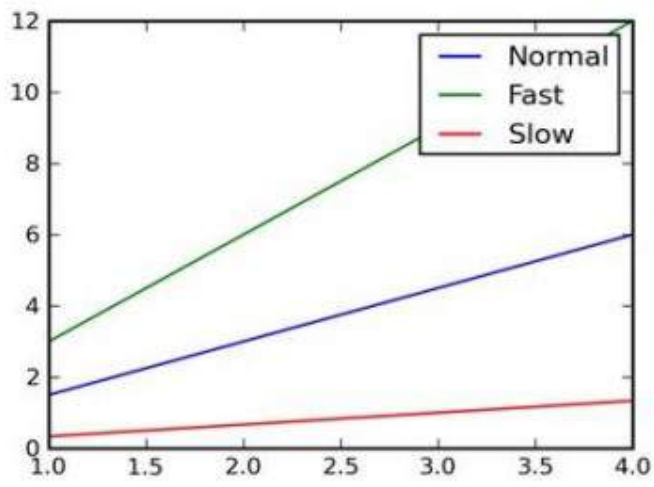
**Time: 3 hrs**

**General Instructions:**

1. This question paper contains two parts A and B.  
Each part is compulsory.
2. Part-A has 2 sections:
  - a. Section – I is short answer questions, to be answered in one word or one line.  
15 question 1 marks each
  - b. Section – II has 3 case studies questions.  
Each case study has sub-parts. 10 question 1 marks each
3. Part - B is Descriptive Paper.
4. Part- B has three sections
  - a. Section-I 10 question 2 marks each (has sub-parts)
  - b. Section-II 3 question 3 marks each (has sub-parts)
  - c. Section-III 4 question 4 marks each (prog/sql/network case study)

<b>PART A</b>		
<b>SECTION - I</b>		
1.	Write the expand form of VOIP .	1
2.	Fill in the blanks : The command used to give a title along X-Axis to a graph is _____.	1
3.	By default, ORDER BY clause lists the records in _____ order.	1
4.	Write the output:- SELECT SUBSTR("APSKOLKATA",4,3);	1
5.	Write the output:- SELECT CHAR(70, 65, 67, 69);	1
6.	SQL applies condition on groups through _____ clause. a) Group by    b) Select    c) where    d) Having	1
7.	Which of the following is not an aggregate function? a)Avg    b) Sum    c)Count    d)with	1
8.	The SQL built-in function _____ obtains the largest value in a numeric column.	1
9.	_____ function is use to create a horizontal Bar chart.	1
10.	Which of the following is not a network device? a)Hub    b)Switch    c)Mesh    d)Router	1
11.	_____ function returns rows from a dataframe row-wise.	1
12.	_____ function creates a line chart.	1
13.	Which of the following is not an example of topology? a)Tree    b)Guild    c)Star    d) Bus	1
14.	To change the index of a Data Series we need to use _____ function.	1
15.	By default df.head() will display _____ rows from the top.	1

SECTION - II																																																			
16.	<pre>import pandas as pd data = [1,2,3,4,5] df = pd.DataFrame(data) print(df)</pre> <p>Write the output?</p>	1																																																	
17.	<p>Consider the following dataframe <b>df</b> as given below</p> <table border="1"> <thead> <tr> <th>Roll No</th> <th>Name</th> <th>Age</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Arun</td> <td>18</td> <td>68</td> </tr> <tr> <td>2</td> <td>Mohit</td> <td>14</td> <td>47</td> </tr> <tr> <td>3</td> <td>Karan</td> <td>13</td> <td>78</td> </tr> <tr> <td>4</td> <td>Lalit</td> <td>16</td> <td>87</td> </tr> <tr> <td>5</td> <td>Ravi</td> <td>14</td> <td>60</td> </tr> </tbody> </table> <p>Consider the DataFrame <b>df</b> and answer the following four questions :</p>	Roll No	Name	Age	Marks	1	Arun	18	68	2	Mohit	14	47	3	Karan	13	78	4	Lalit	16	87	5	Ravi	14	60																										
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i)	Display the details of the student who scored Maximum Marks.	1																																																	
ii)	Display the sum of all the Marks.	1																																																	
iii)	Display the Average of Marks column.	1																																																	
iv)	Delete details of student whose roll no =2.	1																																																	
18.	<p>Table: Student</p> <table border="1"> <thead> <tr> <th>RNo</th> <th>Class</th> <th>Name</th> <th>DOB</th> <th>Gender</th> <th>Hometown</th> <th>Marks</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>XII</td> <td>Nilansh</td> <td>2003-12-03</td> <td>M</td> <td>Delhi</td> <td>480</td> </tr> <tr> <td>2</td> <td>X</td> <td>Mili</td> <td>2005-06-02</td> <td>F</td> <td>Pune</td> <td>400</td> </tr> <tr> <td>3</td> <td>XI</td> <td>Rajat</td> <td>2004-02-01</td> <td>M</td> <td>Chennai</td> <td>450</td> </tr> <tr> <td>4</td> <td>X</td> <td>Kumar</td> <td>2005-09-06</td> <td>M</td> <td>Bhopal</td> <td>240</td> </tr> <tr> <td>5</td> <td>XI</td> <td>Ishita</td> <td>2004-05-06</td> <td>F</td> <td>Delhi</td> <td>305</td> </tr> <tr> <td>6</td> <td>XII</td> <td>Mitali</td> <td>2003-11-01</td> <td>F</td> <td>Calcutta</td> <td>401</td> </tr> </tbody> </table> <p>Consider the above Table and answer the following questions(give output) :</p>	RNo	Class	Name	DOB	Gender	Hometown	Marks	1	XII	Nilansh	2003-12-03	M	Delhi	480	2	X	Mili	2005-06-02	F	Pune	400	3	XI	Rajat	2004-02-01	M	Chennai	450	4	X	Kumar	2005-09-06	M	Bhopal	240	5	XI	Ishita	2004-05-06	F	Delhi	305	6	XII	Mitali	2003-11-01	F	Calcutta	401	
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i)	Select Max(Marks) from Student;	1																																																	
ii)	Select Count(*) from student group by Class Having Gender = 'M';	1																																																	
iii)	Select Substr(Name,4,4) from Student where RNo=1;	1																																																	
iv)	Select Sum(Marks) from Student where Class='X';	1																																																	
v)	Select Max(Marks)+Min(Marks) from Student As imp_Marks.	1																																																	
PART B																																																			
SECTION - I																																																			
19.	<p>I. Write a python code to create a dataframe 'sales' as given below</p> <table border="1"> <thead> <tr> <th></th> <th>Item_name</th> <th>Amount</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>notebook</td> <td>100</td> <td>2</td> </tr> <tr> <td>1</td> <td>pen</td> <td>50</td> <td>5</td> </tr> <tr> <td>2</td> <td>inkpen</td> <td>30</td> <td>3</td> </tr> </tbody> </table> <p>II. Write the command to calculate maximum quantity in the above data frame</p>		Item_name	Amount	Quantity	0	notebook	100	2	1	pen	50	5	2	inkpen	30	3	2																																	
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20.	What is Cyber Crime? Write the act that deals with it.	1+1= 2
21.	What is e-waste? How can we can manage it (two points)?	1+1= 2
22.	What is URL? give Example.	1+1= 2
23.	What is plagiarism? How can you avoid plagiarism while referring to someone else's' creation.	1+1= 2
24.	<p>Mr. Harry wants to draw a line chart using a list of elements named LIST. Complete the code to perform the following operations:</p> <p>(i) To plot a line chart using the given LIST,  (ii) To give a y-axis label to the line chart named "Sample Numbers".</p> <pre>import matplotlib.pyplot as PLINE LIST=[10,20,30,40,50,60] _____ Statement 1 _____ Statement 2 PLINE.show()</pre>	2
25.	<p>Write a code to plot the speed of a passenger train as shown in the figure given below:</p> 	2
26.	<p>Write a python code to create a dataframe with appropriate headings from the list given below :</p> <p>['S101', 'Amy', 70], ['S102', 'Bandhi', 69], ['S104', 'Cathy', 75], ['S105', 'Gundaho', 82]</p>	2
27.	<p>Write a small python code to create a dataframe with headings(a and b) from the list given below :</p> <p>[[1,2],[3,4],[5,6],[7,8]]</p>	2
28.	Define Identity theft.	2

SECTION - II																																
29.	<p>Consider the following dataframe, and answer the questions given below:</p> <pre>import pandas as pd df = pd.DataFrame({"Quarter1": [2000, 4000, 5000, 4400, 10000],                   "Quarter2": [5800, 2500, 5400, 3000, 2900],                   "Quarter3": [20000, 16000, 7000, 3600, 8200],                   "Quarter4": [1400, 3700, 1700, 2000, 6000]})</pre> <p>(i) Write the code to find mean value from above dataframe df over the index and column axis. (Skip NaN value)  (ii) Use sum() function to find the sum of all the values over the index axis.  (iii) Find the <b>transpose</b> of the dataframe df.</p>	1+1 +1=3																														
30.	<p>Shewani has recently started working in MySQL. Help her in understanding the difference between the following :</p> <p>(i) Where and having clause  (ii) Count(column_name) and count(*)</p>	1.5 + 1.5 =3																														
31.	<p>On the basis of following table answer the given questions:</p> <p style="text-align: center;">Table: CUSTOMER_DETAILS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Cust_ID</th> <th>Cust_Name</th> <th>Acct_Type</th> <th>Accumlt_Amt</th> <th>DOJ</th> <th>Gender</th> </tr> </thead> <tbody> <tr> <td>CNR_001</td> <td>Manoj</td> <td>Saving</td> <td>101250</td> <td>1992-02-19</td> <td>M</td> </tr> <tr> <td>CNR_002</td> <td>Rahul</td> <td>Current</td> <td>132250</td> <td>1998-01-11</td> <td>M</td> </tr> <tr> <td>CNR_004</td> <td>Steve</td> <td>Saving</td> <td>18200</td> <td>1998-02-21</td> <td>M</td> </tr> <tr> <td>CNR_005</td> <td>Manpreet</td> <td>Current</td> <td>NULL</td> <td>1994-02-19</td> <td>M</td> </tr> </tbody> </table> <p>(i) Write the degree and cardinality of the above table.  (ii) What will be the output of the following query :  Select max(DOJ) From Customer_Details;  (iii) Write the sql query to delete the row from the table where customer has no accumulated amount.</p>	Cust_ID	Cust_Name	Acct_Type	Accumlt_Amt	DOJ	Gender	CNR_001	Manoj	Saving	101250	1992-02-19	M	CNR_002	Rahul	Current	132250	1998-01-11	M	CNR_004	Steve	Saving	18200	1998-02-21	M	CNR_005	Manpreet	Current	NULL	1994-02-19	M	1+1 +1 =3
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**SECTION - III**

32.

Consider the following tables and answer the questions following it

TABLE : Emp

ENO	ENAME	GENDER	JOB	HIREDATE	SAL	COMM	MGR	PHONE	DNO
6601	Bhavana	F	CLERK	1980-12-21	15000	Null	6604	Null	10
6602	Rohan	M	SALESMAN	1982-10-15	12000	1000	6603	Null	20
6603	Divya	F	MANAGER	1980-09-23	28000	Null	Null	464876	20
6604	Ruchita	F	MANAGER	1981-08-31	25000	Null	Null	469453	10
6605	Kush	M	ANALYST	1985-07-15	20000	Null	6606	264789	30
6606	Nikita	F	MANAGER	1988-06-18	12000	1200	Null	462900	30
6607	Gurpreet	M	PRESIDENT	1965-05-22	40000	Null	Null	263258	40
6608	Vivek	M	CLERK	1989-04-20	12000	Null	6603	267534	20
6609	Manas	M	SALESMAN	1990-03-28	10000	1400	6604	265812	10
6610	Sapana	F	ANALYST	1983-09-24	22000	Null	6603	Null	20

Write the command

- (i) To increase the field width of ENAME to 20 instead of 15
- (ii) To increase the salary by 5% of all those employees who are working for more than 15 years
- (iii) To delete the details of those employees who joined after 1985
- (iv) To display the names of those employees whose phone no is starting with 4

1+1  
+1+  
1=4

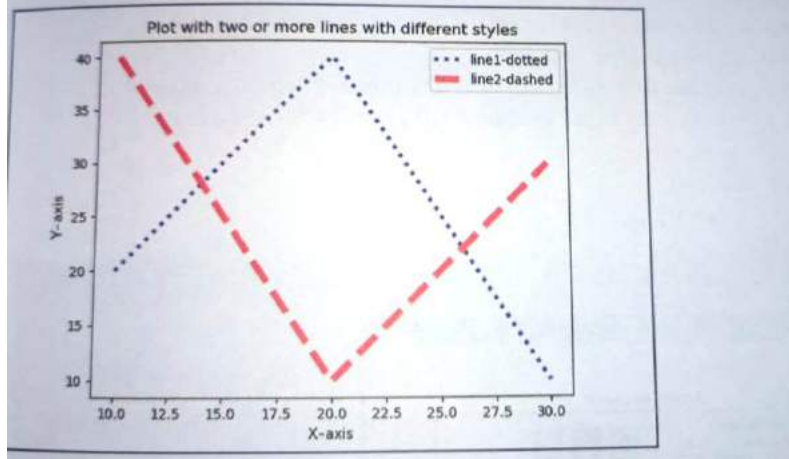
33.

Write the expand form :-  
i)LAN ii)MAN iii)SMTP iv)TCP

1+1+  
1+1=  
4

34.

Write a Python program to plot two or more lines with different styles (dotted lines).



2+2  
=4

35.

Meerut school in Meerut is starting up the network between its different wings. There are four buildings named as S, J, A and H. The distance between various buildings is as follows:

A to S	200 m
A to J	150 m
A to H	50 m
S to J	250 m
S to H	350 m
J to H	350 m

Number of computers in Each Building:

S	130
J	80
A	160
H	50

- (i) Suggest the cable layout of connections between the buildings.
- (ii) Suggest the most suitable place (i.e. building) to house the server of this school, provide a suitable reason.
- (iii) Suggest the placement of the following devices with justification
  - Repeater
  - Hub/Switch
- (iv) The organization also has inquiry office in another city about 50-60 km away in hilly region. Suggest the suitable transmission media to interconnect to school and inquiry office out of the following:
  - Fibre optic cable
  - Microwave
  - Radio wave

1+1  
+1+  
1=4