ARMY PUBLIC SCHOOL, ASC C&C BANGALORE

PRE BOARD-1 EXAMINATION 2020-21

CLASS XII – 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. 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 subparts. 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 True or False : i. IPR means not giving authors credit after copying that author's work ii. Series is a one-dimensional array like structure with homogeneous data	1
2	Fill in the blanks : The command used to plot a line graph is _____ a) plt.hist() b) plt.plot() c) plt.bar() d) plt.show()	1

3.	Which of the following is a network topology : Round, VPN, Tree, Branch, Bridge	1
4	Given a Pandas series called Srs2, the command which will display the last 5 rows is _____. a. print(Srs2.head(5)) b. print(Srs2.tail()) c. print(Srs2.tail(-5) d. print(Srs2.head())	1
5	Given the following Series S1 and S2: SR1 A 50 B 30 C 70 D 60 SR2 A 30 B 20 C 60 D 40 Write the command to print the difference between series SR1 and SR2	1
6	Pandas rename() function can be used to change the name of the existing a. Index b. Column c. Index & Column	1
7	_____ is a license that gives right opposite to copyright	1
8	The _____command can be used to remove the rows of a table in SQL.	1
9	Write the output of the following SQL command. select ROUND(51.388,-1); a. 51.4 b. 50 c. 60 d. 0	1

10	Vinod started a new internet café with 15 computers. Which out of the following devices would you suggest connect computers? a) Hub b) Switch Justify your answer.	1
11	The left() function in MySql is an example of _____. a) Math function b) Text function c) Date Function d) Aggregate Function	1
12	_____ helps the website to understand login state, preferences and other browsing elements of the user	1
13	_____ type of webpage remains the same every time it is loaded	1
14	I can keep your system safe from unauthorized access. I can exist as both hardware and software. Who am I?	1
15	Which amongst the following is/are not an example of computer network ? a. CAN b. LAN c. PAN d. TAN	1
16	Write 2 E-waste hazards to include in awareness poster	1
17	_____ is the use of messaging systems to send an unsolicited message to large numbers of recipients for the purpose of commercial advertising	1
18	Shape attribute gives _____ of a dataframe	1

19	_____ in SQL are used to return a single value from the given input value	1
20	_____ is nothing more than the address of a given unique resource on the Web or address of a website	1
21.	_____ comprises posting, sending or sharing negative, nasty or false information about another individual for causing humiliation and character assassination.	1
	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 DataFrame **df** and answer any four from (i) to (v)
	
	`   B_NO  Name  Score1  Score2`
	`0  1  Sunil Pillai  90  80`
	`1  2  Gaurav Sharma  65  45`
	`2  3  Piyush Goel  70  95`
	`3  4  Kartik Thakur  80  76`	

(i)	Which among the following option will give 90 95 as output a. print(max(df['Score1','Score2']) b. print(max(df['Score1']), max(df['Score2'])) c. print(max(df['Score1']) d. print(max(df['Score2'])	1
(ii)	Vinu needs to know the marks scored by the person with B number 4. Help her to identify the correct set of statement/s from the given options : a. print(df[df['B_NO']==4]) b. print(df['B_NO']==4) c. print(df[df.B_NO=4]) d. print(df[df['B_NO'])	1

(iii)	Which of the following statement/s will delete 3rd column ? i. del df['Total'] ii. df.pop('Total') iii. drop df['Total'] iv. pop df['Total'] Choose the correct option: a) both (i) and (ii) b) only (ii) c) (i), (ii) and (iii) d) (i), (ii) and (iv)	1
(iv)	Which of the following command will display the number of elements in the DataFrame? a. print(df.shape) b. print(df.num) c. print(df.size) d. print(df.elements)	1
(v)	Ms. Anitha wants to add a new column score 3. Help her choose the command to do so: a. df.column=[70,46,91,49] b. df ['Score3']=[70,46,91,49] c. df.loc['Score3']= [70,46,91,49] d. Both (b) and (c) are correct	1
23	Consider the table **EMP** given below:	

EMP_ID	EMP_NAME	CITY	DOJ	DEPT	SALARY
E001	ANKITA	MUMBAI	2000-10-12	DEVELOPMENT	65000
E002	SUSHANT	KOCHI	2002-08-09	TESTING	45000
E003	VINOD	BANGALORE	2000-01-12	DEVELOPMENT	63000
E004	MOHITHA	BANGALORE	2009-04-11	DESIGN	40000
E005	SHIVA	DELHI	2005-03-06	TESTING	52000

(i) State the command that will give the output as : 1

EMP_NAME
VINOD MOHITHA

i. select emp_name from emp where emp_id=E003 OR emp_id=E004;
ii. select emp_name from emp where city='bangalore';
iii. select name from emp where city="bangalore" OR city="Mumbai";
iv. select name from emp where dept IN("Development", "Design");

Choose the correct option:
a. Both (i) and (ii).
b. Both (iii) and (iv).
c. Any of the options (i), (ii) and (iv)
d. Only (ii)

(ii) What will be the output of the following command? 1
Select * from student where emp_name like 's%';

a.

EMP_ID	EMP_NAME	CITY	DOJ	DEPT	SALARY
E002	SUSHANT	KOCHI	2002-08-09	TESTING	45000
E005	SHIVA	DELHI	2005-03-06	TESTING	52000

b.

EMP_ID	EMP_NAME	CITY	DOJ	DEPT	SALARY
E002	SUSHANT	KOCHI	2002-08-09	TESTING	45000

c.

EMP_ID	EMP_NAME	CITY
E002	SUSHANT	KOCHI
E005	SHIVA	DELHI

	d. EMP_NAME | CITY | DOJ | DEPT SUSHANT | KOCHI | 2002-08-09 | TESTING SHIVA | DELHI | 2005-03-06 | TESTING	
(iii)	Gokul has given the following command to obtain the highest salary from each department Select max(salary) from emp where group by dept; but he is not getting the desired result. Help him by writing the correct command. a. Select max(dept,salary) from emp where group by dept; b. Select max(salary) from emp order by dept; c. Select max(salary) group by dept from emp; d. Select max(salary) from emp group by dept;	1
(iv)	State the command to display the average salary of each department who are in Mumbai city Select dept, avg(salary) from student where city= “mumbai” group by dept; Select dept, avg(salary) from student group by dept where city= “mumbai”; Select dept, avg(salary) group by city from student having city= “mumbai”; Select dept, avg(salary) from student group by gender having city= “mumbai”; Choose the correct option: a. Both (ii) and (iii) b. Both (ii) and (iv) c. Both (i) and (iii) d. Only (i)	1

(v)	Help Suraj to write the command to display the dob of the eldest employee? a. select min(DOB) from emp ; b. select max(DOB) from emp ; c. select min(DOB) from emp group by emp_name ; d. select maximum(DOB) from emp;	1

	Part - B	
	Section – I	
24	Arunima writes the following commands with respect to a table student having fields, rollno, name, UT1, UT2, UT3 Command1 : Select count(*) from student; Command2: Select count(UT3) from student; She gets the output as 20 for the first command but gets no output for second command. Explain the output with justification.	2
25	State any two methods to protect your computer from viruses **OR** State any two health concerns related with use of technology	2
26	Consider the decimal number x with value 799.3656. Write commands in SQL to: i. Round it to 3 places **after** the decimal. ii. Round it off to a whole number without using round function	2

27	Consider the following DataFrame object, DF1 |	marks
---	---
Arun	18
Anu	22
Benit	30
Cilona	35 | i. Write the command which will display the name of the person having more than 25 marks. ii. Write the command to change marks to mark1.	2
28	Consider a given Series , SRS: Index |	
---	---
UT1	55
UT2	67
UT3	63
UT4	69 | Write a program in Python Pandas to create the series.	2
29	Expand the following terms related to Computer Networks: **a.** VoIP b. URL c. NIC d. POP	2

30	. What do you understand by Net Etiquettes? List any two.	2

<table>
<tr><td>31</td><td>Consider the following DataFrame, cust

<table><tr><th>CUST_ID</th><th>CUST_NAME</th><th>ACC_TYPE</th><th>EMI_AMOUNT</th></tr><tr><td>C01</td><td>ARUN</td><td>CURRENT</td><td>9500</td></tr><tr><td>C02</td><td>LATHA</td><td>SAVINGS</td><td>1000</td></tr><tr><td>C03</td><td>CHOWHAN</td><td>SAVINGS</td><td>4980</td></tr><tr><td>C04</td><td>KISHORE</td><td>SAVINGS</td><td>12300</td></tr><tr><td>C05</td><td>STEVE</td><td>CURRENT</td><td>5500</td></tr></table>
Write commands to :
i. Add a new column ‘MONTHS’ to the Dataframe
ii. Remove row having values of customer named latha</td><td>2</td></tr>
<tr><td>32</td><td>Vishwanath received an e-mail which says he won an online lottery. On clicking the link he reached a website which asking for his credit card details to transfer money to his bank account.
i. What is your suggestion to proceed further?
ii. What kind of activity is mentioned here?</td><td>2</td></tr>
<tr><td>33</td><td>a) Consider the following SQL string “armypublicschoolasc”

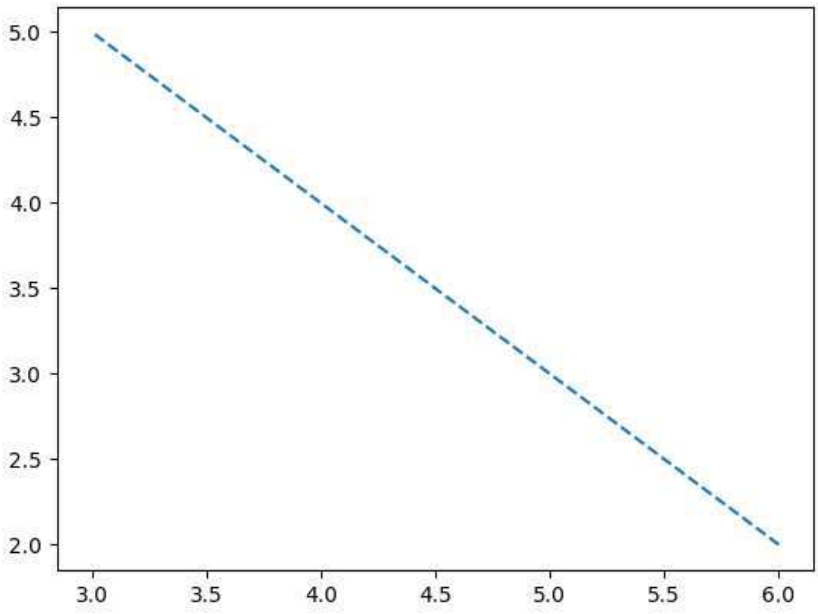
Write SQL commands to display:
i) the position of the substring ‘public’ in the string
ii) the last 3 letters of the string

OR

b) Considering the same string “armypublicschoolasc”

Write commands to display:

i) army
ii) publicschool</td><td>2</td></tr>
</table>

	Section - II	
34	a) What do you mean by WWW? How it's different from Internet? **OR** b) Discuss Plagiarism in the context of IPR issues. Give some example for plagiarism.	3
35	Consider the given python code: import pandas as pd lst=[10,20,30,40] sr=pd.Series(lst) print(lst*2) #first print print(sr*2) #second print i. Does first print and second print produce the same output? ii. Justify your answer iii. Write output of the code	3
36	a) Consider the following graph. Write the code to plot it.  **OR** b) The number of students in 5 different classes is given below. Represent this data on the bar graph. **Class** 8 9 10 11 12 **Strength** 60 55 52 61 58	3

37 Consider the table **stock** given below 3

ItemCode	Type	Company	Price	Units
M008	Smart Phone	Micromax	12000	25
L005	Laptop	Acer	38500	12
M009	Smart Phone	Samsung	20000	23
L003	Laptop	Lenovo	55000	07
T006	Tablet	Acer	17000	35
L019	Laptop	Samsung	42000	15

Write SQL commands to:

a. Display the total stock of each company

b. Display items in the descending order of the price

c. Display the average price of laptops as AVG OF LAPTOP

Section -III

38 Write a program in Python Pandas to create the following DataFrame IP from a Dictionary: 5

R_No	Name	Theory	Practical
21	Arun E D	67	28
22	Anu M N	65	28
23	Benit Anto	70	29
34	Cilona David	66	28

Perform the following operations on the DataFrame :
1)Add both the marks of a student and assign to column “Total”
2)Add a new row with values in all fields
3)Display the highest mark in both Theory and Practical of the DataFrame.

39

Write the SQL functions which will perform the following operations: 5

i) To display system date and time.

ii) To display the name of the month e.g., November or December from system date

iii) To display the starting position of your last name(lname) from your whole name (fname+lname).

iv) To remove spaces from the beginning and end of a string, " apsasc ".

v) Find value of 5^5 and display as POWER

OR

Consider a table EMP with the following data:

EMPCODE	ENAME	BASIC PAY	ALLOWANCE	DOJ
E001	Arun Thakkarai	24000	6500.34	18-03-2017
E002	Vinod Mishra	22500	4500.00	13-06-2018
E003	Kumari Aleena	31000	NULL	24-01-2015
E004	Leela Yadav	27500	2561.76	03-08-2018
E005	Neena George	35000	1500.26	03-01-2016
E006	Vishnu Kumar	30000	3000.22	08-03-2017

Write SQL queries using SQL functions to perform the following operations:

a) Display the position of occurrence of the string "ar" in employee names.

b) Display the last three characters from employee names

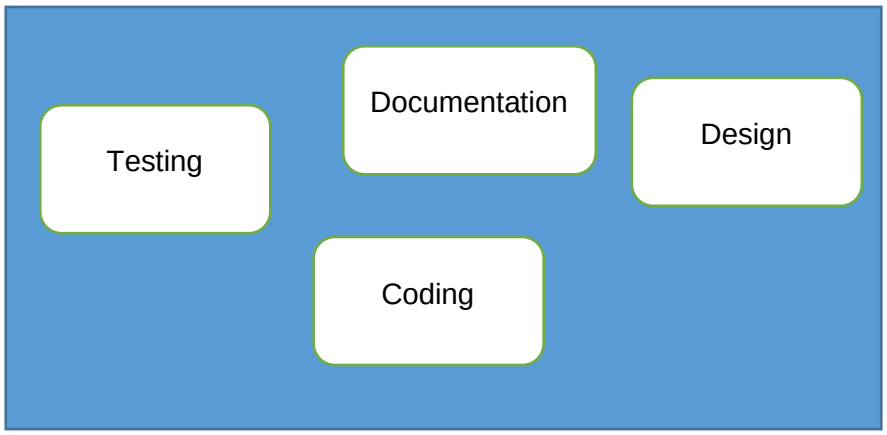
c) Display EMPCODE and allowance after rounding off to zero decimal places.

d) Display the day name for the date of join of salesman

e) Display the name of the employee in the decreasing order of basic pay

40.

A newly established IT company has 4 buildings at their development center as shown in the diagram : 5



Shortest distances between various locations:

Testing to Coding	200 M
Design to Coding	250 M
Documentation to Coding	300 M
Testing to Design	350 M
Testing to Documentation	450 M
Design to Documentation	400 M

Number of Computer in various buildings:
Coding - 75
Design - 40
Testing - 30
Documentation - 15

I. Suggest the most appropriate location of the SERVER in the center (out of the 4 locations), to get the best and effective connectivity. Justify your answer

II. Suggest the cable layout (location to location) to efficiently connect various buildings within the center.

III. Which hardware device will you suggest to connect all the computers within each building?

IV. Suggest a method to prevent signal lose between testing and documentation

V. Suggest an appropriate technology to connect Experts from Head Office and people at development center