KENDRIYA VIDYALAYA SANGATHAN, JAIPUR REGION
Pre-Board-III Examination 2020-21
Informatics Practices
Class 12

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

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:
   - Section – I is short answer questions, to be answered in one word or one line.
   - 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 True or False: a. Public Domain Software is free and can be used with restrictions. b. Free software is same as freeware.	1
2	To save the plot, we use graph () function.	1
3	Group functions are also known as _____ functions.	1
4	To create a series object, _____ method is used.	1
5	The series object is automatically indexed , if it has five items what are the indexes.	1
6	A _____ is summarization tool for discrete or continuous data.	1
7	Software which usually limit the functionality after a trial period are known as _____	1
8	Matplotlib allows you to create a. Table b. Charts	1

	c. Maps d. Infographics	
9	In _____ all computers share equivalent responsibility for processing data.	1
10	Which amongst the following is the first page we normally view on a Website? a. Home Page b. Master Page c. First Page d. Banner Page	1
11	The now()function in MySql is an example of . a. Math function b. Text function c. Date Function d. Aggregate Function	1
12	Which of the following is not a type of a cybercrime? a. Data Theft b. Forgery c. Damage to data d. Installing Antivirus	1
13	In a dataframe, axis-0 is for a. Columns b. Rows c. Rows and columns both d. All of the above.	1
14	Wi-fi, infrared, and Bluetooth are examples of _____	1
15	Digital Signature meets the need for _____ and integrity.	1
16	A set rules that govern the Internet is called _____ .	
17	The term "Intellectual Property Rights" covers:- a. Copyrights b. Trademarks c. None of the above d. Both a & b	
18	The _____- function returns the lowest value from the given column or expression.	
19	Which clause is used in query to place the condition on groups in MySQL. a. where b. Group by c. Having d. Both a & c	

20	What is the use of bridge in the network? a. To connect LANs. b. To separate LANs. c. To control network speed. d. All of these.	1
21	A repeater handles different protocols. (True/False)	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 data frame and answer any four questions from I to v . **CODE PNAME PRICE** **0 x01 Talcum powder 200** **1 x02 Face wash 50** **2 x03 Bath soap 40** **3 x04 Shampoo 200** **4 x05 Tooth paste 300**	
(i)	Write a command that will display code ' x01' complete record. a. print(df.loc[0]) b. print(df.loc[0:1]) c. print(df.loc[0,'pname']) d. print(df.loc[0:])	1
(ii)	Write command to display only column pname: a. print(df['pname']) b. print(df.loc['pname']) c. both a & b d. none of the above	1
(iii)	Write output of the code: print(df[0:2])	1
(iv)	Write output of the code: print(df.loc[0:2,'code'])	1
(v)	Write the command to generate the following output: code pname price 0 x01 Talcum powder 200 1 x02 Face wash 501	1
23	Consider table student and attempt any four queries from I to V	

Name	Rollno	Marks
Mehak	1	99
Anis	2	79
Sushant	3	89
Uzma	4	Null

(i)	To display the detail of student whose marks are not entered.	1

	(a) Select * from student where marks= null; (b) Select * from student where marks is null; (c) Select * from student where marks= 0;	
(ii)	Display the detail of students in a descending order of rollno (a) Select * from student where order by rollno; (b) Select * from student order by rollno; (c) Select * from student order by rollno desc; (d) Select * from student where order by rollno desc;	
(iii)	Write a query to generate the output: ucase(name) | marks | +-------------+-------+ | MEHAK | 99 | | ANIS | 79 | | SUSHANT | 89 | | UZMA | NULL | +-------------+-------+ (a) Select ucase(name), marks from student; (b) Select name, marks from student; (c) Select * from student; (d) Select capital(name),rollno from student;	1
(iv)	Write query to display minimum marks; (a) Select minimum(marks) from student; (b) Select min(marks) from student; (c) Select min('marks') from student; (d) Both b and c	1
(v)	Write query which generate the following output: name | rollno | marks | +------+--------+-------+ | anis | 2 | 79 | (a) select * from student where rollno=2; (b) select * from student where name='anis'; (c) select * from student where rollno>=2; (d) both (a) & (b)	1

	PART B **SECTION I**	
24	Consider the series, s1 import pandas as pd1 s =pd1.Series(500,index=[100,101,102,103,104]) print(s.index) s1=s s2=s+s1 print(s2)	2
25	Differentiate between single row function and multiple row function. Give example. **OR** How are NULL values treated by aggregate functions? Give example	2
26	Write output of the following queries: (a) select pow(2, 2); (b) select round(1.58,1);	2
27	Consider the series h1 0 12 1 23 2 34 3 27 (a) Write code to change the index as a1,a2,a3,a4. (b) Write the name of module imported to create series.	2
28	Write the difference between the two queries, these two queries are generating different outputs, give reason why?: (a) Select count(*) from student; (b) Select count(name) from student;	2
29	Write the output of the query given: (a) Select right("Hello India",5); (b) Select mid(("Hello India",1,5); OR (a) Write query to display the day name from the current date. (b) Write the output of the query: select dayofmonth('2020-09-23');	2
30	Write python code to create the given dataframe using dictionary and display. code pname price 0 x01 Talcum powder 200 1 x02 Face wash 50 2 x03 Bath soap 40 3 x04 Shampoo 200 4 x05 Tooth paste 300	2
	5	

31	Expand the following terms: (A) FTP (B) ISP (C) WWW (D) PAN	2
32	Write two applications of Cyber law.	2
33	Mr. Amit Mishra is using his internet connection for checking the online account of company's admin without his knowledge. What do we call this type of activity? What are the ways by which we can avoid such type of activities?	2
	SECTION II	
34	(a) Which function is used to create the series. (b) What is the default data type of series? (c) Write the syntax to name the series "s'' as 'hello'	3
35	Describe measures to recycle your e-waste safely. (3 ways) **OR** Write merits and demerits of social networking. (3 points)	3

36	Consider the code and draw the graph accordingly.
	import numpy as np
	import matplotlib.pyplot as plt
	year=[2014,2015,2016,2017,2018]
	#jnvpasspercentage=[90,92,94,95,97]
	kvpasspercentage=[89,91,93,95,98]
	#plt.plot(year,jnvpasspercentage)
	plt.plot(year,kvpasspercentage)
	plt.xlabel('Year')
	plt.ylabel('Passpercentage')
	plt.title('KV PASS% till2018')
	plt.legend()
	plt.show()
	OR
	Complete the following code to plot bar graphs.
	import matplotlib.pyplot as plt
	import numpy as np
	label=['Anil', 'Vikas', 'Dharma', 'Mahen', 'Manish', 'Rajesh']
	per=[94,85,45,25,50,54]
	index=np.arange(len(label))
	_____ (statement 1)
	plt.xlabel('Student Name', fontsize=5)
	_____('Percentage', fontsize=5) (statement2)
	plt.xticks(index, label, fontsize=7, rotation=50)
	plt.title('Percentage of Marks achieve by student Class XII')
	_____ (statement 3)
		3

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37 A relation Vehicles is given below : 3

V_no	Type	Company	Price	Qty
AW125	Wagon	Maruti	250000	25
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

Write SQLcommands to:

a. Display the total price of maruti company.
b. Count the type of vehicles manufactured by each company.
c. Display detail of all the types of vehicles in ascending order of company.

SECTION III

38 Write a python code to 5

(A) create a dataframe df from csv file named 'student.csv'
(B) display the detail of students having marks more than 90, assuming marks as column name.
(C) Display complete dataframe columnwise.

39 Consider the table LIBRARY given below and write SQL query:- 5

Author	Subject	Publisher	Quantity	Price
Lipschute	DS	McGraW	4	217.00
NORTRON	OS	PHI	3	175.00
RobortLafoe	Prog	Galgotia	5	270.00
Palmer	DBMS	PustakM	7	130.00
Cowart	OS	BPB	1	225.00
French	FND	Galgotia	2	75.00
Stern	Prog	John W	4	1000.00
Freed	NET	Zpress	3	200.00
Norton	Prog	BPB	3	40.00
Schildt	Prog	McGraw	4	350.00

(a) Display author in upper case .
(b) Display minimum and maximum price from table library.

(c) Display the name of publisher and quantity multiplied by price.
(d) Display detail of author whose name start with 'F'.
(e) Display total quantity of books of each subject.

OR

(A) Display the price of books after rounding it off to zero decimal place.
(B) Display the current date and time.
(C) Display the publisher name after removing all the spaces.
(D) Display the first four characters of publisher name
(E) Display the length of string("good morning");

40 KVS has started a new school in city and in school it has four places to connect LAB1, LAB2, EXAMINATION , PRINCIPAL OFFICE. 5

The distance between them IN meters is:

LAB1 TO LAB2	100
Lab2 to principal	120
Examination to principal	120
Lab1 to examination	80
Lab1 to principal	110
Lab2 to examination	90
Lab2 to principal	105

	No of Computers in each
Lab1	50
Lab2	30
Principal	2
Examination	10

i. Suggest a suitable cable layout for networking the computers of all labs and offices.
ii. Suggest the placement of Hub/Switch/Repeater in the network.
iii. Mention the fast way to provide internet accessibility to all wings.
iv. In which wing server will be installed.
v. Which device is required to connect computer with internet cable, without which internet access is not possible but network works.