

KENDRIYA VIDYALAYA SANGATHAN, LUCKNOW REGION

FIRST PRE BOARD EXAMINATION 2019-20
SUBJECT: INFORMATICS PRACTICES NEW(CODE-065)

Class: XII (SET-1)

Maximum marks: 70

Duration: 3 Hours

NOTE:-

Question Paper are divided into 4 sections A,B,C and D.

*Section A is comprising of questions(1 and 2)

(i) Question 1 is comprising of Data Handling-2(DH-2)(Series,Numpy)

(ii) Question 2 is comprising of question from Data Handling -2(DH-2) (Data Frames and its operations)

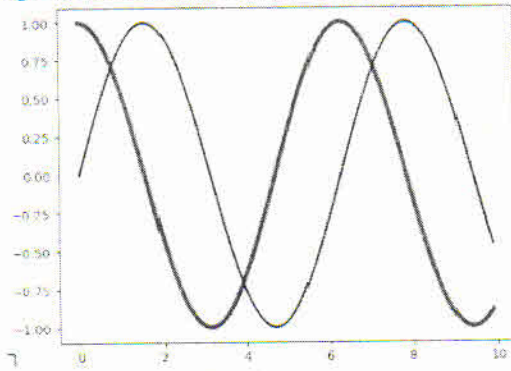
*Section B is comprising of questions from Basic Software Engineering.

*Section C is comprising of questions from Data Management-2(DM-2)

*Section D is comprising of questions from Society, Law and Ethics-2(SLE-2)

SECTION -A

Answer the following questions :

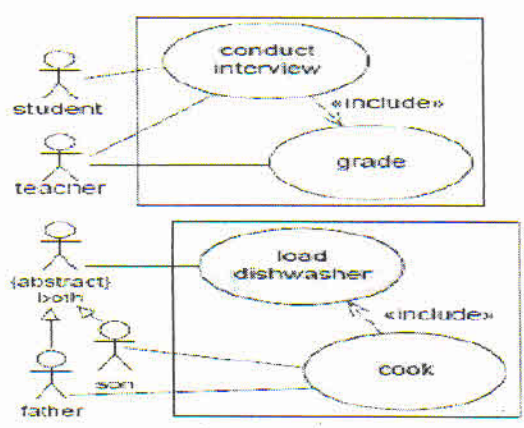
1 (a)	Find the output of following program. import numpy as np d=np.array([56,89,12,90,85,82,70]) print(d[-6:])	1
(b)	Fill in the blank with appropriate numpy method to calculate and print the variance of an array. import numpy as np data=np.array([1,2,3,4,5,6]) print(np.__(data,ddof=0))	1
(c)	What is Broadcasting Operation in DataFrame? OR How to Check if a Data Frame has any missing values?	1
(d)	Write any two difference between numpy array and list.	2
(e)	Write a code to plot for Changing Line color(any color), width and style as shown in the figure given below: 	2
(f)	What are the Applications on NumPy Arrays? Write down the names with syntax?	2
(g)	Find the Output of the following program import numpy as np array1=np.identity(3) print(array1) x=np.where(array1==0) for i in x: array1[x]=np.random.randint(10,20)	3

	<pre>print(array1)</pre> <p style="text-align: center;">OR</p> <p>Write a NumPy program to create a 3x3 identity matrix, i.e. non diagonal elements are 1, the rest are 0. Replace all 0 to random number from 1 to 10.</p>	
Answer the following questions :		1
2 (a)	Write the use of reindexing. Give example also.	1
(b)	<p>What is the difference between reindex() and rename() functions?</p> <p style="text-align: center;">OR</p> <p>What is the difference between pivot and pivot_table functions?</p>	
(c)	What is the use of matplotlib and pyplot?	1
(d)	Write down the two Series Object Attributes?	1
(e)	<p>Write the commands to perform the following operations on two 4X4 dimension arrays namely P and Q</p> <p>(i) Adding 10 to P</p> <p>(ii) Divide all elements of Q by 7</p> <p>(iii) Extract all those elements from P which are divisible by 5</p> <p>(iv) Multiplication of two arrays P and Q</p>	2
(f)	<p>Write a python code to create a dataframe with appropriate headings from the list given below :</p> <p>['A101', 'ANIL', 57], ['A102', 'SAUMYA', 45], ['A104', 'RAM', 75], ['A105', 'G PANDEY', 22]</p> <p style="text-align: center;">OR</p> <p>Write a small python code to create a data frame with headings(a and b) from the list given below :</p> <p>[[1,5],[3,7],[5,3],[7,9]]</p>	2
(g)	<p>Find the output of the following code:</p> <pre>import pandas as pd data = [{'a': 10, 'b': 20}, {'a': 6, 'b': 32, 'c': 22}] #with two column indices, values same as dictionary keys df1 = pd.DataFrame(data, index=['first', 'second'], columns=['a', 'b']) #With two column indices with one index with other name df2 = pd.DataFrame(data, index=['first', 'second'], columns=['a', 'b1']) print(df1) print(df2)</pre> <p style="text-align: center;">OR</p> <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)</p> <p>(ii) Use sum() function to find the sum of all the values over the index axis.</p> <p>(iii) Find the median of the dataframe df.</p>	3
(h)	<p>Suppose a data frame contains information about student having columns rollno, name, class and section.</p> <p>Write the code for the following:</p> <p>(i) Add one more column as fee</p> <p>(ii) Write syntax to transpose data frame.</p> <p>(iii) Write python code to delete column fee of data frame.</p>	3
(i)	Given the following set of data :	4

	Weight measurements for 16 small orders of French Fries (in grams) 78 72 69 81 63 67 65 75 79 74 71 83 71 79 80 69 (i) Create a simple histogram from above data. (ii) Create a horizontal histogram from above data. (iii) Create a cumulative histogram from above data. (iv) Create a vertical boxplot without the box	
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SECTION –B

Answer the following questions :

3 (a)	The Incremental Model is a result of combination of elements of which two models? Which is a) Build & FIX Model & Waterfall Model b) Linear Model & RAD Model c) Linear Model & Prototyping Model d) Waterfall Model & RAD Model	1
(b)	If you were a lead developer of a software company and you are asked to submit a project/product within a stipulated time-frame with no cost barriers, which model would you select? a) RAD b) Spiral c) Waterfall d) Incremental	1
(c)	Write a short note on 'GIT'.	1
(d)	Write advantages of spiral model. <p align="center">OR</p> Write the events of scrum.	2
(e)	Why waterfall model is failure? <p align="center">OR</p> Explain agile software development.	3
(f)	What is the difference between software validation and software verification? What are the different-2 stages?	3
(g)	Write the phases of waterfall model ? <p align="center">OR</p> (i) Look at the following use case diagrams and write the actors and the situation depicted by the use case diagrams :  (ii) Look at the use case diagram shown below and explain the relationship depicted between A and B	4

SECTION –C

Answer the following questions :

4 (a)	What are the advantages of Django web framework?	1
(b)	What is the use of COMMIT in SQL? <p align="center">OR</p> What is the function of DROP command?	1

(c)	Write command to install my sql connector.	1
(d)	Give differences between Having Clause and Order by Clause?	1
(e)	is_connected() is the MYSQL function to : (i) establish a connection to a mysql database from python. (ii) verify whether the python application is connected to mysql database. (iii) traverse through records in mysql database. (iv) None of the above	1
(f)	Write a python database connectivity script that insert the name & address of customers in a customer table?	3
(g)	Anita has recently started working in MySQL. Help her in understanding the difference between the following : (i) Degree and Cardinality (ii) Count(column_name) and count(*)	3

(h)	Write SQL Commands and the output for following queries	4
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StudentNo	Class	Name	Game1	Grade1	Game2	Grade2
10	7	Sammer	Cricket	B	Swimming	A
11	8	Sujit	Tennis	A	Skating	C
12	7	Kamal	Swimming	B	Football	B
13	7	Venna	Tennis	C	Tennis	A
14	9	Archana	Basketball	A	Cricket	A
15	10	Arpit	Cricket	A	Athletics	C

a) Display the names of the students who have grade 'A' in either Game1 or Game2 or both.

(b) Display the number of students having game 'Cricket'.

(c) Display the names of students who have same game for both Game1 and Game2

(d) Display the games taken by the students whose name starts with 'A'

(e) Give the output of the following sql statements
 (i) SELECT COUNT(*) FROM SPORTS
 (ii) SELECT DISTINCT Class FROM SPORTS.
 (iii) SELECT MAX(Class) FROM STUDENT.
 (iv) SELECT COUNT(*) FROM SPORTS GROUP BY Game1.

OR

(i) In a Vidyalaya, a database named "School" is created in mysql whose password is "123". Shreya is trying to add a new record of a student having details(3,'Amit','Agartala') in a "student" table.

(ii) Write the code in python to read the contents of "number.csv" file consisting of data from a mysql table and print the data of the table on the screen in tabular form of the table.

SECTION -D

Answer the following questions :

5 (a)	What is Intellectual Property?	1
(b)	What is Plagiarism? What are types of Plagiarism?	1
(c)	Mr. Rakesh is confused between Shareware and Open Source. Mention at least one-one points of differences to help him understand the same.	1
(d)	What measures can you take to curb online frauds? OR What is Cyber Crime? Write the act that deals with it.	2
(e)	Write down the two psychological treatments of Internet Addiction Disorder?	2
(f)	Write three advantages of Online Campaigning? OR Mrs Shristhi has many electronics gadgets which are not usable due to outdated hardware and software. Help her to find any three best ways to dispose the used electronic gadgets.	3

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