

केन्द्रीय विद्यालय संगठन, कोलकाता संभाग
KENDRIYA VIDYALAYA SANGATHAN, KOLKATA REGION
सत्र समाप्ति परीक्षा/ SESSION END EXAMINATION – 2022-23

कक्षा / CLASS – XI

FOR PRACTICE

अधिकतम अंक/MAX. MARKS –70

विषय/SUB.– INFORMATICS PRACTICES (065)

समय/TIME–03 /Hours

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 03 Long Answer type questions carrying 05 marks each.
7. Section E has 02 questions carrying 04 marks each. One internal choice is given in Q34 & Q35 against **part iii** only.
8. All programming questions are to be answered using Python Language only.

SECTION – A		
1.	Which of the following is NOT TRUE? (a) The startup program stored in a ROM (b) Hard Disk is Secondary Memory (c) RAM is Non Volatile (d) Solid-State Drives are Secondary Storage Devices	1
2.	_____ introduced the concept of stored program computer which was capable of storing data as well as program in the memory. (a) Charles Babbage (b) John Von Neumann (c) Alan Turing (d) Herman Hollerith	1
3.	What is the need for secondary memory? (a) To speed up the operations of the CPU (b) To permanently store the data or instructions for future use (c) Program and data are loaded into it before processing. (d) To store the startup program (boot loader)	1
4.	Which of the following is not an application Software? (a) Adobe Reader (b) Microsoft Edge (c) Microsoft Word (d) Ubuntu	1
5.	Which of the following is NOT a Data Capturing device? (a) Barcode Reader (b) Smart card readers (c) Fingerprint scanners (d) Graphics tablet	1
6.	Which of the following is a valid identifier? (a) _MyFile\$ (b) 2MyFile (c) _2My File (d) True	1

7.	The following is an example of sequence data type? (a) Integer (b) String (c) Dictionary (d) Float	1
8.	Num1, Num2=10,0 Num1/Num2 is an example of _____ (a) Syntax error (b) Runtime error (c) Logical error (d) Type error	1
9.	Which of the following statements create a dictionary? (a) d={} (b) d={"John":40,'Peter':45} (c) d=dict() (d) All of the above	1
10.	What is the output of the below Python code? a=[1,2,3,'A',None,(),[],[],[10,20]] print(len(a)) (a) 8 (b) 9 (c) 7 (d) Error	1
11.	Which of the following is/are correct statement(s) about primary key of a table? (a) Primary key can contain NULL values (b) Primary keys cannot contain NULL values (c) A table can have only one primary key with single or multiple fields (d) A table can have multiple primary keys with single or multiple fields	1
12.	What will be the output of following query? INSERT INTO student VALUES ("Suhana",109,'F'), VALUES ("Rivaan",102,'M'), VALUES ("Atharv",103,'M'), VALUES ("Rishika",105,'F'), VALUES ("Shaurya",109,'M'); (a) Error (b) No Error (c) Depends on compiler (d) Successful completion of the query	1
13.	Which of the following is not a valid data type in SQL? (a) char(n) (b) string(n) (c) varchar(n) (d) float(n)	1
14.	What is true about the following SQL statement? Select * FROM student; (a) Displays contents of table 'student' (b) Displays column names and contents of table 'student' (c) Results in error as improper case has been used (d) Displays only the column names of table 'student'	1

15.	<p>What is cloud computing?</p> <p>(a) A network of computers and printers available within an Organization.</p> <p>(b) A type of internet based computing that provides shared computer processing resources and data to computers and other devices on demand.</p> <p>(c) A process of scheduling computer programs to work autonomously.</p> <p>(d) Storage on data on servers that is accessible by all members of organization.</p>	1
16.	<p>Which are not the potential application of block chain?</p> <p>(a) Voting</p> <p>(b) Health record</p> <p>(c) Online gaming</p> <p>(d) Fund transfer</p>	1
	<p>Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as</p> <p>i. Both A and R are true and R is the correct explanation for A</p> <p>ii. Both A and R are true and R is not the correct explanation for A</p> <p>iii. A is True but R is False</p> <p>iv. A is false but R is True</p>	
17.	<p>Assertion(A): Candidate Key can serve as a primary key in a table.</p> <p>Reason (R): Candidate Key is always unique and should not hold Null value</p>	1
18.	<p>Assertion(A): Dictionary keys are mutable</p> <p>Reason (R): When duplicate keys are encountered, the last key value pair is taken</p>	1
SECTION B		
19.	<p>(i) 3.7 GB = _____ Bytes</p> <p>(ii) 1 TB = _____ MB</p> <p style="text-align: center;">OR</p> <p>Identify the category (system, application, programming tool) of the following software:</p> <p>(a) Compiler</p> <p>(b) Assembler</p> <p>(c) Python</p> <p>(d) Tally</p>	2
20.	<p>Give the output of the following:</p> <p>(i) <code>print(5 % 10 + 10 < 50 and 29 <= 29)</code></p> <p>(ii) <code>num1**=num2+num3</code> (When num1=4, num2=3, num3=2)</p>	2
21.	<p>Write the output of the following python code:</p> <pre>sum = 0 for i in range(0,9,2): if i % 4 == 0: sum = sum + i print (sum)</pre>	2
22.	<p>Consider the following list myList. What will be the elements of myList after each of the following operations?</p> <pre>myList = [10,20,30,40]</pre> <p>(a) <code>myList.append([50,60])</code></p> <p>(b) <code>myList.extend([80,90])</code></p>	2

23.	<p>What will be the outputs of the following program if we input value of day is : (i) 5 , (ii) 8</p> <pre> day=int(input("Enter the day in number")) if (day==1): print("MON") if (day==2): print("TUE") if (day==3): print("WED") if (day>=4 and day<=7): print("OTHER"); else: print("INVALID") </pre> <p style="text-align: center;">OR</p> <p>A dictionary is given as: Student={'Aman':75, 'Raman':89, 'Nisha':90} Write the statements to do the following: (i) To modify the marks of 'Aman' from 75 to 78 (ii) To display the marks of 'Nisha'</p>	2																														
24.	<p>A student table has 6 rows and 3 columns. 2 more columns are added and 2 rows are deleted. What is the degree and cardinality of the final table?</p>	2																														
25.	<p>Given the following Data types and constraints for the attributes of relation STUDENT:</p> <table border="1" data-bbox="177 976 1233 1335"> <thead> <tr> <th>Attribute Name</th> <th>Data expected to be stored</th> <th>Data Type</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>Rollno</td> <td>Numeric value consisting of maximum 3 digits</td> <td>INT</td> <td>Primary Key</td> </tr> <tr> <td>Name</td> <td>Variant length string of maximum 20 characters</td> <td>VARCHAR</td> <td>NOT NULL</td> </tr> <tr> <td>DOB</td> <td>Date Value</td> <td>DATE</td> <td></td> </tr> <tr> <td>Attend_Date</td> <td>Date Value</td> <td>DATE</td> <td>NOT NULL</td> </tr> <tr> <td>Attend_Status</td> <td>'P' for present and 'A' for absent</td> <td>CHAR(1)</td> <td>NOT NULL</td> </tr> </tbody> </table> <p>Write SQL command to Create the above table.</p>	Attribute Name	Data expected to be stored	Data Type	Constraint	Rollno	Numeric value consisting of maximum 3 digits	INT	Primary Key	Name	Variant length string of maximum 20 characters	VARCHAR	NOT NULL	DOB	Date Value	DATE		Attend_Date	Date Value	DATE	NOT NULL	Attend_Status	'P' for present and 'A' for absent	CHAR(1)	NOT NULL	2						
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SECTION C																																
26.	<p>Write down the type of memory needed to do the following: (a) To store data permanently (b) To execute the program (c) To store the instructions which cannot be overwritten.</p>	3																														
27.	<p>Write the output for the following SQL queries as per given table: Table: Employee</p> <table border="1" data-bbox="177 1653 1254 1895"> <thead> <tr> <th>EmpNo</th> <th>Ename</th> <th>Salary</th> <th>Bonus</th> <th>DeptId</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Aaliya</td> <td>20000</td> <td>250</td> <td>D02</td> </tr> <tr> <td>102</td> <td>Vergese</td> <td>60000</td> <td>695</td> <td>D01</td> </tr> <tr> <td>106</td> <td>Sanya</td> <td>48000</td> <td>550</td> <td>D02</td> </tr> <tr> <td>109</td> <td>Joseph</td> <td>42000</td> <td>NULL</td> <td>D04</td> </tr> <tr> <td>110</td> <td>Tanya</td> <td>50000</td> <td>475</td> <td>D05</td> </tr> </tbody> </table> <p>(i) SELECT * FROM EMPLOYEE WHERE Ename LIKE '_ANYA'; (ii) SELECT Ename FROM EMPLOYEE WHERE Ename LIKE '%se%'; (iii) SELECT Empno, Ename, Salary+Bonus as "Total Salary" from EMPLOYEE WHERE EMPNO IN(109,110);</p>	EmpNo	Ename	Salary	Bonus	DeptId	101	Aaliya	20000	250	D02	102	Vergese	60000	695	D01	106	Sanya	48000	550	D02	109	Joseph	42000	NULL	D04	110	Tanya	50000	475	D05	3
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28.	<p>If Government plans to make a smart school by applying IoT concepts, how can each of the following be implemented in order to transform a school into IoT (Internet of Things) enabled smart school? (Any Three)</p> <p>a) e-textbooks b) Smart boards c) Online tests d) Wifi sensors on classrooms doors e) Sensors in buses to monitor their location f) Wearables (watches or smart belts) for attendance monitoring</p>	3
29.	<p>Consider a list: list1 = [6,7,8,9] What is the difference between the following operations on list1: (a) list1*2 (b) list1*=2 (c) list1=list1*2</p> <p style="text-align: center;">OR</p> <p>Consider a list: a=[1,2,3] (a) Is a*3 is equivalent to a+a+a? (b) What's the difference between a[1:2] and a[1:1]? (c) What is the meaning of a[1:1]=9?</p>	3
30.	<p>Write a program to read a list of n integers (positive as well as negative). Create two new lists, one having all positive numbers and the other having all negative numbers from the given list. Print all three lists.</p> <p style="text-align: center;">OR</p> <p>Write a program to read a list of n numbers and display the smallest and second largest number of the list.</p>	3
SECTION D		
31.	<p>The record of a student (Name, Roll No, Marks in five subjects, percentage of marks and sports grade) is stored in the following list: stRecord = ['Raman', 'A-36', [56,98,99,72,69], 78.8, 'A'] Write Python statements to do the following in the list stRecord. a) To retrieve the Marks in the fifth subject. b) Minimum marks of the student. c) To delete the Roll No. of the student. d) Change the name of the student from 'Raman' to 'Raghav'. e) To insert another grade 'B' for subject painting at the end of the list.</p> <p style="text-align: center;">OR</p> <p>Write a program to input your friend's, names and their phone numbers and store them in the dictionary as the key-value pair. Perform the following operations on the dictionary: a) Display the Name and Phone number for all your friends. b) Add a new key-value pair in this dictionary and display the modified dictionary. c) Delete a particular friend from the dictionary d) Modify the phone number of an existing friend e) Check if a friend is present in the dictionary or not</p>	5
32.	<p>Consider the following table named "GYM" with details about Fitness products being sold in the store. Table Name : GYM PrCode stores Codes of Products PrName stores names of Products (UnitPrice is in Rs.)</p>	5

Table: GYM

PrCode	PrName	UnitPrice	Manufacturer
P101	Cross Trainer	25000	Avon Fitness
P102	TreadMill	32000	AG Fitline
P103	Massage Chair	20000	Fit Express
P104	Vibration Trainer	22000	Avon Fitness
P105	Bike	13000	Fit Express

Write SQL statements for (i) to (iii) and outputs for (iv) and (v) based on the table GYM:

- (i) Display the Names of all the products in the store.
- (ii) Display the details of all the products with unit price less than Rs.20000 for the manufacturer 'Fit Express'.
- (iii) Display details of all the products with unit price in the range 20000 to 30000.
- (iv) SELECT PrCode, PrName, UnitPrice from GYM WHERE Manufacturer='AG Fitline' OR Manufacturer='Fit Express';
- (v) SELECT Pname, UnitPrice, Manufacturer FROM GYM WHERE PrName LIKE '%e' AND Manufacturer="Fit Express";

33. Consider the following table MOVIE and answer the SQL queries based on it.

5

Table : Movie

MovieID	MovieName	Category	ReleaseDate	ProductionCost	BusinessCost
001	Hindi_Movie	Musical	2018-04-03	124500	130000
002	Tamil_Movie	Action	2016-05-17	112000	118000
003	English_Movie	Horror	2017-08-06	245000	360000
004	Bengali_Movie	Adventure	2017-01-04	72000	100000
005	Telugu_Movie	Action	-	100000	-
006	Punjabi_Movie	Comedy	-	30500	-

- (i) List the different categories of movies.
- (ii) Find the net profit of each movie showing its ID, Name and Net Profit (Net Profit = BusinessCost – ProductionCost), Make sure that the new column name is labelled as NetProfit.
- (iii) List all movies with ProductionCost greater than 80,000 and less than 1,25,000 showing ID, Name and ProductionCost.
- (iv) List all movies which fall in the category of Comedy or Action.
- (v) List the movies which have not been released yet.

OR

Write SQL commands for the following queries (i) to (v) based on the relation Teacher:

Table : Teacher

T_ID	Ename	Age	Department	Date_of_Join	Salary	Gender
T01	Jugal	34	Computer Sc	10/01/2017	12000	M
T02	Sharmila	31	History	24/03/2008	20000	F
T03	Sandeep	32	Mathematics	12/12/2016	30000	M
T04	Sangeeta	35	History	01/07/2015	40000	F
T05	Rakesh	42	Mathematics	05/09/2007	25000	M
T06	Shyam	50	History	27/06/2008	30000	M
T07	Shiv Om	44	Computer Sc	25/02/2017	21000	M
T08	Shalakra	33	Mathematics	31/07/2018	20000	F

- (i) To list the names of female teachers of Mathematics department.
- (ii) To list the names of all male teachers who get salary more than 20000.
- (iii) To display teacher's name, salary, age for male teachers only
- (iv) To display name, bonus for each teacher where bonus is 10% of salary
- (v) Insert a new record in the above table with the following values:
'T09', 'Ajay', 35, 'Computer Sc', '12/10/2017', 'M'

SECTION E

34.

Table: Supplier

SupplierID	SupplierName	ItemName	Quantity	City
S001	Britannia	Marie Biscuit	100	Bangaluru
S002	Monginis	Fruit Cake	250	Kolkata
S003	Nestle	Chocolate	150	New Delhi
S004	Biskfarm	Digestive Biscuit	200	Kolkata
S005	Amul	Butter	200	Mumbai

From the above supplier table answer the following:

- (i) Write a query to display the city names without repetition.
- (ii) Write a query to display the details of suppliers whose names start with 'B'.
- (iii) Write a query to display the Supplier Name, Item Name, City and Annual Quantity which is calculated as **quantity*12** for the suppliers Britannia and Nestle.

OR (Option for part iii only)

Differentiate between DDL and DML with suitable example of each.

35. **Write the output of the queries (i) and (ii) based on the table, Furniture and answer for question (iii) given below:**

TABLE: FURNITURE

FID	NAME	DATEOFPURCHASE	COST	DISCOUNT
B001	DOUBLE BED	2018-01-03	45000	10
T010	DINING TABLE	2020-03-10	51000	5
B004	SINGLE BED	2021-06-19	22000	0
C003	LONG BACK CHAIR	2016-12-30	12000	3
T006	CONSOLE TABLE	2019-11-17	15000	12
B006	BUNK BED	2021-01-01	28000	14

- (i) SELECT DATEOFPURCHASE FROM FURNITURE WHERE NAME IN ("Dining Table", "Console Table");
- (ii) SELECT * FROM FURNITURE WHERE DISCOUNT>5 AND FID LIKE "T%";
- (iii) What is a Foreign Key? What is its significance in a table?

OR (Option for part iii only)

Table: STUDENT

Roll No	Name	Class	Section	Registration_ID
11	Mohan	XI	A	IP-101-15
12	Sohan	XI	B	IP-104-15
21	John	XII	A	CS-103-14
22	Meena	XII	B	CS-101-14
23	Juhi	XII	B	CS-101-10

In the above table answer the following:

- (i) Can a user assign duplicate value to the field RollNo of STUDENT table? Justify.
- (ii) Is there any alternate key in table STUDENT? Give justification for your answer.
