Informatics Practices (065)
Sample Question Paper –2
(Solution)

Note

1. This question paper is divided into sections
2. Section – A: 30 marks.
3. Section – B and Section – C: 20 marks each
4. Answer the questions after carefully reading the text.

Section – A			
Q 1.	Answer the following questions		
	(a)	**UNICODE:** A 16-bit code to represent the characters used in most of the world's scripts. It can accommodate way more characters that ASCII, thus allowing for easier internationalization. **GNU:** GNU is Not Unix - A set of programs written by the Free Software Foundation to provide a Free (as in libre) UNIX framework.	2
	(b)	**Solution:** Client-Server Technology is the name of the technology that we use in modern day computer related tasks. Client Server Computing is the programming practice, which we adapt to develop Client Server Application. A bank is a better example to understand the outcome of Client-Server Computing. In modern Banks the areas like Enquiry Counter, Teller, Manager etc are computerized through Client Server technology. The Bank Premises can have one or two main servers that cater the need of many Clients like the users working in the areas mentioned above.	2
	(c)	**Solution:** In this world everything that we see or feel is an object. Modeling physical world object is known as Object Modeling technique. The modern software applications are designed using Object Modeling Techniques. The common example for object can be “Student”, “Table”, “Car” etc. UML is called Unified Modeling Language and is a widely used platform for designing object-oriented applications.	2
	(d)	**Solution:** Data Mining is a technology that can be applied to many varied decision-making situations. The Major areas which are of interest under this hood are Marketing: Example: Analysing Consumer Behavior, Analysing Sales pattern in some Area of Sale etc. Finance Manufacturing Health Care Data Warehousing is the storage and management of data with an added functionality of responsiveness to the queries that are beyond the capabilities of transaction oriented approach of RDBMS. These warehouses provide easy and fast retrieval of archived data in the form of huge storages. A Data Warehouse comes as a storage unit and a system to operate on that storage. A distinction from conventional databases is that they are of transactional nature but warehouses are mainly intended for Decision Support Systems.	4
Q2	Answer the following questions		
	(a)	**Solution:** We have to use DISTINCT keyword while writing select statements. e.g to view unique Job of the employees we can use the following query SELECT DISTINCT Sal FROM Emp; If we will not use the DISTINCT Keyword then it will show multiple occurrence of Job because each employee is working with a Job. DISTINCT should be the first keyword after SELECT statement and can be used only once one statement.	2
	(b)	**Solution:** SQL Functions are the Functions defined in SQL, which produces one result on its successful execution. SQL Functions can be broadly categorized into System Defined and User Defined Functions. On the	4

basis of number of rows accepted as input it can also be categorized as Single Row Function and Multiple Row Function.
The Single Row Functions are Categorized as
Character Functions
Case Conversion Function: Lower, Upper and InitCap
Character manipulation Function: TRIM, LENGTH, SUBSTR etc.
Number Functions: ROUND TRUNC, and MOD
Date Functions: Months_Between, Next_Day, Last_Day etc.
Data Type Conversion Function: TO_CHAR, TO_DATE, TO_NUMBER

(c) **Solution:** 4

Row Level Triggers	Statement Level Triggers
Fires once on each row affected by the DML statement.	Fires once per statement
These triggers uses FOR EACH ROW clause in the trigger definition. It does not get executed if the statement causes no rows as a result of query execution	It fires once at least irrespective of the no of rows affected.

CREATE or REPLACE TRIGGER Policy_Who
BEFORE INSERT or UPDATE
ON Policies
FOR EACH ROW
BEGIN
:new.Who_Last :=USER;
:new.when_last := SYSDATE;
END;
This trigger will automatically insert a value in the fields Who_Last and When_Last for each row update or insert to keep a record of who modified the record at last.
	CREATE or REPLACE TRIGGER PolicyHello
	BEFORE INSERT or UPDATE
	ON Policies
	BEGIN
	dbms_output.put_line('Hello');
	END;
	/
	This trigger will produce an output Hello on Inserting or modifying records in the table policy.

Q3 Answer the following questions

(a) **Solution:** 2
Error in program code can be termed as the bug, which either malfunction the program code or does not let the code to execute at all. Visual basic uses Err object to know about the properties of an Error. The two general types of error can be
Divide By Zero Error
Use of Null assignment (Giving value to the property of a non existing object)

(b) **Solution:** 4
System Defined function:
A function, which is by default available in the system, is called System Defined Function.
User Defined Function:
A function developed by the user (programmer) for performing a task, and is not available in the system by default, is known as User Defined Function.

```
Public Function funCheckNumeric(str As String) As Boolean
 If IsNumeric(str) Then
   funCheckNumeric = True
 Else
   funCheckNumeric = False
 End If
End Function
```

	(c)	**Solution:** A Common dialog box is the dialog box provided in visual basic to show few common options to the user such as File Open, Font, Color, and Save etc. **Steps to Include a Common Dialog Box Control:** We can include a common dialog box by adding Windows Common Controls from Project->Component Menu A small icon that can be placed on a form and is invisible at runtime can programmatically be used to show common dialog box. Assuming that the name of the Common Dialog box is CommonDialog1 then we can embed the following code fragment in the Click event of menu mnuFileNew CommonDialog1.ShowOpen After opening the dialog box we are required to treat the user inputs as per requirements.	4

Section – B			
Q4	Read the following case study and answer the questions that follows		
		Answer the following questions based on the above program	
	(a)	**Solution:** The function Name is LoadPicture()	1
	(b)	**Solution:** *.jpg	1
	(c)	**Solution:** filMyFile.Path = dirMyDirectory.Path	2
	(d)	**Solution:** dirMyDirectory.Path = drvMyDrive.Drive	2
	(e)	**Solution:** The code window of Change event of drvMyDrive will look like On Error GoTo ErrorProc dirMyDirectory.Path = drvMyDrive.Drive Exit Sub ErrorProc: MsgBox Err.Description	4
Q5	Read the following text and answer the questions that follows:		

	(a)	**Solution**
		Private Sub cmdFind_Click()
		If Val(txtNumber) Mod 2 = 0 Then
		MsgBox "It is an Even Number"
		Else
		MsgBox "It is an Odd Number"
		End If
		End Sub
			2

	(b)	**Solution:** 'Program code to display a message on Clicking of cmdClickMe command button Private Sub cmdClickMe_Click() For i = 1 To Val(txtNumber.Text) MsgBox "I will say Hello at least: " **+** txtNumber.Text + " times" **Next** End Sub Or 'Program code to display a message on Clicking of cmdClickMe command button Private Sub cmdClickMe_Click() For i = 1 To Val(txtNumber.Text) MsgBox "I will say Hello at least: " **&** txtNumber.Text **&** " times" **Next** End Sub	2

	(c)	**Solution:** The underlined statement given below is giving error Private Sub cmdClickMe_Click() For i = 0 To 10 For j = i To 10 **Print j / i** Next Next End Sub Because the statement is dividing the value of J with 0 (Zero) in the first iteration of the inner loop and is the reason for Overflow Error.	2
	(d)	This Code will Print the Message in the message box only once	2
	(e)	**Solution:** Components: This means a list of all Activex components registered in windows and is available as a toolbox control on selection. References are the programming references of the available components in visual basic these objects can be referred in the code and does not appear as a toolbox component. For Example ADODB object is a reference while ADODC Control a component	2
Section C			
Q6	Read the questions given below and answer accordingly		
	(a)	**Solution:** 6 8 11 15	2
	(b)	**Solution:** 1 2 3 2 1	2
	(c)	**Solution:** A variable is a container to hold some value. A variable is declared using data type. By variable scope we mean the visibility of the variable in the program. By default the variables have the scope inside the block in which they are declared.	2

	(d)	**Solution:**
		CREATE OR REPLACE Function ODDEVEN (X IN NUMBER) RETURN BOOLEAN
		IS
		BEGIN
		IF MOD (X,2)=0 THEN
		RETURN TRUE;
		ELSE
		RETURN FALSE;
		END IF;
		END;
		/
			4

6	Answer the following questions based on the following Employee table **Name of Column** — **Type** ID — NUMBER (4) First_Name — VARCHAR2 (30) Last_Name — VARCHAR2 (30) EMail_ID — VARCHAR2 (10) Salary — NUMBER (9,2)		
	(a)	**Solution:** Cursors are the work areas for SQL SELECT statements to fetch records from a database table and work with each record on record-by-record basis. Triggers supports event based execution of code statements in database. A trigger gets initiated on the events such as Updating of records, Deletion of records etc. and can be triggered on Statement Level or Row Level.	2

	(b)	**Solution:**
		CREATE OR REPLACE PROCEDURE EDSAL (EID EMPLOYEE.ID%TYPE)
		IS
		V_SAL EMPLOYEE.SALARY%TYPE;
		BEGIN
		SELECT SALARY INTO V_SAL FROM EMP WHERE ID = EID;
		IF V_SAL <5000 THEN
		UPDATE EMPLOYEE SET SALARY =SALARY*1.15 WHERE ID = EID;
		END IF;
		END;
		/
			4

	(c)	**Solution:**
		CREATE OR REPLACE TRIGGER HELLO
		BEFORE INSERT ON EMPLOYEE
		BEGIN
		DBMS_OUTPUT.PUT_LINE (‘Hello to Insert Operation’);
		END;
		/
			4