

PREBOARD EXAMINATION 2020 INFORMATICS PRACTICES

Class : XII
Date : 14-01-2020

Max. Marks: 70
Duration : 3 Hrs

Note:

- (i) All questions are compulsory.
- (ii) Answer the questions after carefully reading the text.
- (iii) Give example wherever required.
- (iv) Put the questions no. properly.

1	a	<p>Observe the given domains carefully and identify the category it belongs out of eGovernance/e-Business/e-Learning:</p> <ul style="list-style-type: none"> i. AMAZON: www.amazon.in ii. PMO(Prime Minister's office): www.pmo.gov.in 	1															
	b	<p>Ms. Achla, works as a Programmer in a survey firm named "National Survey Foundation". In her current project, she is supposed to design a survey page for an online educational training program. Help her in choosing the most appropriate controls for the specified task from Textfield, Label, RadioButton, CheckBox, ListBox, ComboBox, Button and write in the third column:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 10%;">S. No.</th> <th style="width: 60%;">Control used to input</th> <th style="width: 30%;">Control</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>TRAINEE'S NAME</td> <td></td> </tr> <tr> <td style="text-align: center;">2</td> <td>TRAINING LOCATION</td> <td></td> </tr> <tr> <td style="text-align: center;">3</td> <td>GRADE THE SESSION (Excellent, Good, Satisfactory, Unsatisfactory)</td> <td></td> </tr> <tr> <td style="text-align: center;">4</td> <td>SUGGESTIONS</td> <td></td> </tr> </tbody> </table>	S. No.	Control used to input	Control	1	TRAINEE'S NAME		2	TRAINING LOCATION		3	GRADE THE SESSION (Excellent, Good, Satisfactory, Unsatisfactory)		4	SUGGESTIONS		2
S. No.	Control used to input	Control																
1	TRAINEE'S NAME																	
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3	GRADE THE SESSION (Excellent, Good, Satisfactory, Unsatisfactory)																	
4	SUGGESTIONS																	
	c	List two disadvantages of e-governance to a disabled person.	1															
	d	How is e-learning beneficial for old people?	1															

2

Consider the tables given below.

Salesperson

SalespersonId	Name	Age	Salary
1	Ajay	61	140000
2	Sunil	34	44000
5	Chris	34	40000
7	Amaaya	41	52000

Orders

OrderId	SalespersonId	Amount
10	2	54000
20	7	18000
30	1	46000
40	5	24000

a	The SalespersonId column in the "Salesperson" table is the _____ KEY. The SalespersonId column in the "Orders" table is a _____ KEY.	1
b	Can the 'SalespersonId' be set as the primary key in table 'Orders'. Give reason.	1
c	i. Select * from Salesperson, Orders; ii. Select * from Salesperson, Orders WHERE Salesperson.salespersonId= Orders.salespersonId; What is the degree and cardinality of the above query outputs	1
d	Write commands in SQL to display SalespersonID, names, orderids and order amount of all salespersons.	1

	e	Write commands in SQL to display names ,salespersons ids and order ids of those sales persons whose names start with 'A' and sales amount is between 15000 and 20000.	1												
	f	Find the output of the following query SELECT SalespersonId, name, age, amount FROM Salesperson, orders WHERE Salesperson.salespersonId= Orders.salespersonId AND AGE BETWEEN 30 AND 45;	1												
3	a	While creating the table Student last week, Ms. Sharma forgot to include the column Game_Played. Now write a command to insert the Game_Played column with VARCHAR data type and 30 size into the Student table?	1												
	b	In 'Marks' column of 'Student' table, for Rollnumber 2, the Class Teacher entered the marks as 45. However there was a totaling error and the student has got her marks increased by 5. Which MySQL command should she use to change the marks in 'Student' table.	1												
	c	Charvi wants to delete the records where the "FirstName" is "Rama" in the 'Emp' Table. She has entered the following SQL statement. An error is being displayed. Rewrite the correct statement. DELETE 'Rama' FirstName FROM Emp	1												
	d	Ariya wants to add another column 'Gender' in the already existing table 'CUSTOMERS'. She has written the following statement. However, it has errors. Rewrite the correct statement. [MODIFY TABLE CUSTOMERS GENDER char(1);	1												
	e	Consider the table 'Teacher' given below. <table border="1" data-bbox="343 1456 1177 1720"> <thead> <tr> <th>TeacherId</th> <th>Department</th> <th>Periods</th> </tr> </thead> <tbody> <tr> <td>T101</td> <td>SCIENCE</td> <td>32</td> </tr> <tr> <td>T102</td> <td>NULL</td> <td>30</td> </tr> <tr> <td>T103</td> <td>MATHEMATICS</td> <td>34</td> </tr> </tbody> </table> <p>What will be the output of the following queries on the basis of the above table:</p> <p>(i) Select count(Department) from Teacher; (ii) Select count(*) from Teacher;</p>	TeacherId	Department	Periods	T101	SCIENCE	32	T102	NULL	30	T103	MATHEMATICS	34	1
TeacherId	Department	Periods													
T101	SCIENCE	32													
T102	NULL	30													
T103	MATHEMATICS	34													

	f	<p>Consider the table 'empsalary'.</p> <table border="1" data-bbox="312 398 711 734"> <thead> <tr> <th>ID</th> <th>Salary</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>43000</td> </tr> <tr> <td>102</td> <td>NULL</td> </tr> <tr> <td>104</td> <td>56000</td> </tr> <tr> <td>107</td> <td>NULL</td> </tr> </tbody> </table> <p>i) To select tuples with some salary ,Siddharth has written the following erroneous SQL statement:</p> <p>SELECT ID, Salary FROM empsalary WHERE Salary = something;</p> <p>Write the correct SQL statement.</p> <p>ii) What output will be displayed by the following SQL statement: SELECT AVG(Salary) FROM empsalary ;</p>	ID	Salary	101	43000	102	NULL	104	56000	107	NULL	2
ID	Salary												
101	43000												
102	NULL												
104	56000												
107	NULL												
	g	<p>An attribute A of datatypevarchar(20) has the value "Amit" . The attribute B of datatypechar(20) has value "Karanita" .</p> <p>How many characters are occupied in attribute A? How many characters are occupied in attribute B?</p>	1										
	h	<p>Classify the following commands according to their type :(DDL/DML/TCL)</p> <ol style="list-style-type: none"> i. INSERT INTO ii. Savepoint iii. Create Table iv. Rollback v. Update vi. Delete vii. Drop Table viii. Select ix. ALTER TABLE 	1										
	i	<p>Which clause would you use with Select to achieve the following:</p>	1										

		<ul style="list-style-type: none"> i. To select the values that match with any value in a list of specified values. ii. Used to display unrepeated values of a column from a table. 																						
4	a	Geetanjali issued SET AUTOCOMMIT=0 and she added a new column called Phone_no in the existing customer table using Alter table command. Immediately after adding the column, she wrote the Rollback command to undo the addition of the column Phone_no. Did she execute rollback successfully? Explain.	1																					
	b	<p>suggest her suitable command for the following purpose:</p> <ul style="list-style-type: none"> i. To display the list of the databases already existing in MySQL. ii. To use the database named City. iii. To remove the pre-existing database named Clients. iv. To remove all the records of the table named "Club" at one go along with its structure permanently. v. To display the list of the tables already existing in Database. 	2																					
	c	<p>Consider the table below.</p> <p style="text-align: center;">Table: Company</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>EMPID</th> <th>DEPARTMENT</th> <th>SALARY</th> </tr> </thead> <tbody> <tr> <td>E101</td> <td>PERSONNEL</td> <td>60000</td> </tr> <tr> <td>E102</td> <td>ACCOUNTS</td> <td>65000</td> </tr> <tr> <td>E103</td> <td>MARKETING</td> <td>40000</td> </tr> <tr> <td>E104</td> <td>PERSONNEL</td> <td>62000</td> </tr> <tr> <td>E105</td> <td>PERSONNEL</td> <td>50000</td> </tr> <tr> <td>E106</td> <td>MARKETING</td> <td>35000</td> </tr> </tbody> </table> <p>Identify error(s) in the following SQL statement. Rewrite the correct SQL statement.</p> <pre>SELECT Department, Salary FROM Company GROUP BY Department;</pre>	EMPID	DEPARTMENT	SALARY	E101	PERSONNEL	60000	E102	ACCOUNTS	65000	E103	MARKETING	40000	E104	PERSONNEL	62000	E105	PERSONNEL	50000	E106	MARKETING	35000	1
EMPID	DEPARTMENT	SALARY																						
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E104	PERSONNEL	62000																						
E105	PERSONNEL	50000																						
E106	MARKETING	35000																						
	d	<p>Consider the following table :</p> <p>Table : RESULTS</p>	1																					

STUDENTID	NAME	EXAMID	SCORE
10	Leena	1	20
10	Leena	2	25
11	Samarth	1	30
11	Samarth	2	35
12	Jai	1	14
12	Jai	2	15
14	Shoaib	1	30
14	Shoaib	2	12

Abhay wants to know the number of students who took the test. He writes the following SQL statement to count STUDENTID without duplicates. However the statement is not correct. Rewrite the correct statement and find the output of the query.

SELECT DISTINCT (COUNT EXAMID) FROM RESULTS;

e Observe the given table named "Loan" carefully and predict the output of the following queries: 5

Loan

File_No	Cust_Name	PhoneNo	Loan_Amt	Bank	Cheque_Dt
619095	Ms. Roshni	9899965430	809876	HBDC Ltd.	2017-06-15
234252	Mr. Rajesh	8654327890	745738	ICUCI Ltd.	2017-07-22
543613	Mrs. Sapna	8883546354	NULL	NBI Ltd.S	2017-07-24
435467	Mr. Navneet	9764747474	647484	ICUCI Ltd.	2017-08-13
263427	Ms. Puja	8746454742	546373	HBDC Ltd.	2017-08-30

- i. SELECT TRUNCATE(8.975,2);
- ii. SELECT MID(Cust_Name,5) from Loan where Month(Cheque_Dt)=7;
- iii. SELECT CONCAT(Right(Cust_Name,5), Left(Bank,3)) where Loan_Amt is NULL;
- iv. SELECT DAYOFMONTH(Cheque_Dt) where Cust_Name like 'Ms.%';

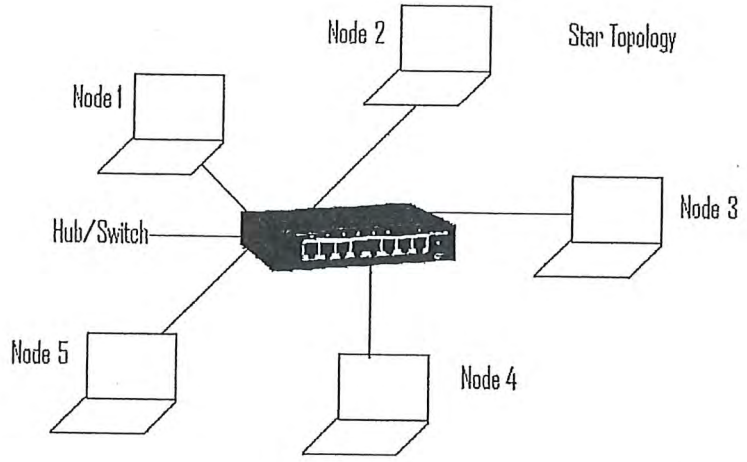
		v. Select round(loan_amt-loan_amt*10/100) As "Discounted Payment" from loan where loan_amt>700000;																			
5	a	<p>Aman has used the following SQL command to create a table stu':</p> <pre>CREATE TABLE stu (id INTEGER, name VARCHAR(100))</pre> <p>Then,Aman enters the following SQL statements to enter 4 rows:</p> <pre>INSERT INTO stu VALUES(1,"Farrah"); INSERT INTO stu VALUES(2,"Miya"); INSERT INTO stu VALUES(3,"Farrah"); INSERT INTO stu VALUES(4,"Miya");</pre> <p>Write the output that will be produced by the following SQL statement :</p> <pre>SELECT name, Count(*) FROM stu GROUP BY name;</pre>	1																		
	b	<p>Srishti has created the following table with the name 'Veterinary'.</p> <table border="1"> <thead> <tr> <th>Column Name</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>AnimalId</td> <td>Primary Key</td> </tr> <tr> <td>VaccinationsDate</td> <td></td> </tr> <tr> <td>AnimalName</td> <td>Not Null</td> </tr> <tr> <td>OwnerName</td> <td></td> </tr> </tbody> </table> <p>One of the rows inserted is as follows :</p> <table border="1"> <thead> <tr> <th>AnimalId</th> <th>VaccinationDate</th> <th>AnimalName</th> <th>OwnerName</th> </tr> </thead> <tbody> <tr> <td>A101</td> <td>2015-02-12</td> <td>Sheru</td> <td>Amit Sharma</td> </tr> </tbody> </table> <p>i. What are the data type of columns AnimalId and VaccinationDate in the table Veterinary ?</p> <p>ii. Srishti is now trying to insert the following row</p>	Column Name	Constraint	AnimalId	Primary Key	VaccinationsDate		AnimalName	Not Null	OwnerName		AnimalId	VaccinationDate	AnimalName	OwnerName	A101	2015-02-12	Sheru	Amit Sharma	2
Column Name	Constraint																				
AnimalId	Primary Key																				
VaccinationsDate																					
AnimalName	Not Null																				
OwnerName																					
AnimalId	VaccinationDate	AnimalName	OwnerName																		
A101	2015-02-12	Sheru	Amit Sharma																		

AnimalId	VaccinationDate	AnimalName	OwnerName
A102	2015-08-09	NULL	Abhimanyu Shah

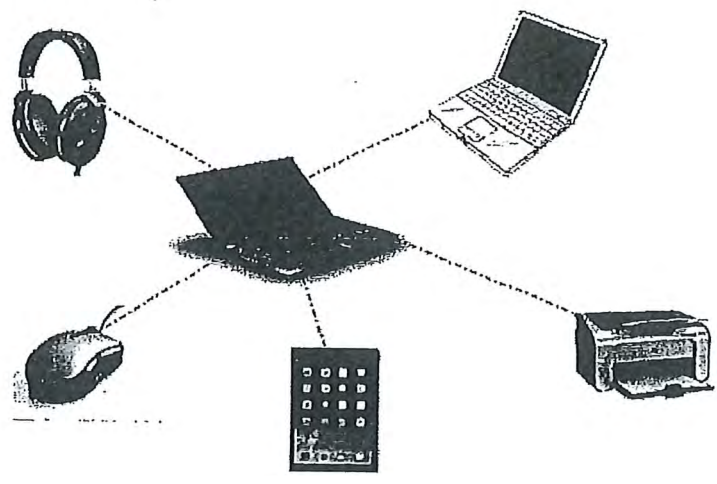
Will she be able to successfully insert it? Give reason.

c What is the meaning of 'Open source' in the term 'Open Source Database Management System'?

6 a i. Identify the topology shown below



ii. Identify the type of network (out of LAN/PAN/MAN/WAN) formed in the given diagram:



b Which of the following are valid IP addresses? Give reason(s) if invalid.

	<p>i) 121.23.1.45 ii) 192.168.0. 254 iii) 192.168.0.1 iv) 198.-1.1.1</p>	
c	Write examples for URL and IP address.	1
d	<p>Which of the following activity can be termed as Eavesdropping:</p> <ol style="list-style-type: none"> i. If Jack sets up an unauthorized parallel telephone line to capture the data. ii. If Jill has stolen his friend's keyboard. iii. If Martina installs some receiver hardware to capture the data while on its way. iv. If Kim gets someone's login information by casually watching what he/she is typing. <p>Select the best suitable option from the following:</p> <ol style="list-style-type: none"> i. Option i only ii. Option ii only iii. Option i and ii both iv. Option i and iii both <p>How Eavesdropping is different from snooping by mentioning any one activity which will be termed as snooping?</p>	2
e	<p>Ms. Sita trying to log into your Internet Banking account for online transaction activity. However, as strange as it may seem, she is denied of an access to the bank's website, in spite of having a swift internet connection.</p> <p>What do you think the reason behind this problem is and suggest her few simple precautions in order to overcome any such type of network security threats.</p>	2
f	<p>Which of the following is/are not communication media?</p> <ol style="list-style-type: none"> (i) Microwaves (ii) Optical Fiber cable (iii) Node (iv) Radio waves (v) Bluetooth (vi) Twisted Pair Cable. (vii) Coaxial Cable 	1

	Identify which of the above mentioned communication media are Wired media and which ones are Wireless media.	
g	<p>It's an era of networking! Almost everyone and everything is connected through one way or the other, hats off to the technology. We have never been so much linked as we are today. Daniel has just started his hands on practice of networking. Help him in the following:</p> <p>I. He has just connected 10 computers of his resource room to establish a network. Name the network (LAN/MAN/PAN/WAN) which will be formed. Mention any two main benefits which Daniel could achieve by establishing a network.</p> <p>II. Help him in identifying the correct topology which has following characteristics:</p> <ul style="list-style-type: none"> • Its very easy to diagnose the fault in this topology. • Failure of central hub/switch leads to failure of the entire network. 	2
7	<p>Ms. Sharma works as a programmer in "ABC Car Rental Company" where she has designed a software to compute charges to be paid by the client. A screenshot of the same is shown below:</p> <div style="border: 1px solid black; padding: 10px; text-align: center;"> <h3>ABC CAR RENTALS</h3> <p>NAME <input type="text"/></p> <p>PHONE NUMBER <input type="text"/></p> <p> <input type="radio"/> Deluxe Car <input type="checkbox"/> GUIDE REQUIRED <input type="radio"/> Semi Deluxe Car <input type="radio"/> Ordinary Car </p> <p>Car Required for No. of Days <input type="text"/></p> <p> <input type="button" value="CALCULATE"/> <input type="button" value="CLEAR"/> <input type="button" value="CLOSE"/> </p> <p>Amount <input type="text"/></p> <p>Guide Charges <input type="text"/></p> <p>Total Amount <input type="text"/></p> </div>	

	<p>A client can take any car out of Deluxe/ SemiDeluxe/ Ordinary for rent.</p> <p>A client can also opt for services of a guide. Charges vary depending on the type of car opted.</p> <p>Charges of services of Guide are extra.</p> <p>Help Ms. Sharma in writing the code to do the following:</p>									
a	<p>After selecting appropriate Radio Button and checkbox (if required), when 'CALCULATE' button is clicked, Amount, Guide Charges and Total Amount should be calculated and displayed in the respective text fields</p> <table border="1" data-bbox="309 790 1086 1070"> <thead> <tr> <th>Category of Car</th> <th>Amount(in Rs.)</th> </tr> </thead> <tbody> <tr> <td>Deluxe Car</td> <td>1000 per day</td> </tr> <tr> <td>Semi Deluxe Car</td> <td>800 per day</td> </tr> <tr> <td>Ordinary Car</td> <td>700 per day</td> </tr> </tbody> </table> <p>Amount is obtained by multiplying per day charges of Car with number of days for which the car is taken.</p> <p>If 'Guide Required' checkbox is selected, Guide charges per day are Rs.500.00.</p> <p>Guide Charges is calculated as :Car required for No. of days * 500;</p> <p>Total Amount = Amount + Guide Charges</p>	Category of Car	Amount(in Rs.)	Deluxe Car	1000 per day	Semi Deluxe Car	800 per day	Ordinary Car	700 per day	4
Category of Car	Amount(in Rs.)									
Deluxe Car	1000 per day									
Semi Deluxe Car	800 per day									
Ordinary Car	700 per day									
b	When 'CLEAR' button is clicked, all the textfields and checkboxes should be cleared.	1								
c	When 'CLOSE' button is clicked, the application should close.	1								
8	<p>a Given below is a code.</p> <pre data-bbox="309 1675 805 1771"><message> <text id=1>Hello, world!</text> </message></pre> <p>Which language is used to write the above code?</p> <p>What are <message></message>, id=2, <text> and </text>?</p>	1								

	<p>b Shambhavi has to design two web pages with following specifications:</p> <p>i. One web page should have an unordered list.</p> <p>ii. Another web page should have background “Yellow” in colour.</p> <p>Suggest her suitable tag(s) and attribute(s) for the above specifications</p>	1
	<p>c Find the output of the following</p> <pre>String a,b,c,d,x; a="Ideal"; b="Indian"; c="School"; d="Doha"; int e = a.length()+b.length()/4+d.length()*2; x=d+b+c; x=a.concat(x); System.out.println("The value of e = "+e); System.out.println(x.toUpperCase()); System.out.println(x.substring(5,9));</pre>	2
	<p>d Write the value of variable ‘d’ after executing the following code.</p> <pre>inta,b,c,d; a=100; b=++a; c=b--; d=(10*b++)%3;</pre>	1
	<p>e First Code:</p> <pre>int x=2,y=40; while(y<=x) { jTextField1.setText(""+x); x=x+8; }</pre>	2

	<p>Second Code :</p> <pre> int x=2,y=40; do { jTextField1.setText(""+x); x=x+8; } while(y<=x); </pre> <p>Third Code:</p> <pre> intx,y=40; for(x=2,y<=x; x=x+8) { jTextField1.setText(""+x); } </pre> <p>From the above three codes, identify Entry controlled and Exit controlled loops. Will the output from the above two code be any different? Give reasons for your answer.</p>	
f	<p>Find the output of the following code.</p> <p>Code 1:</p> <pre> inti; for(i=7; i>1; i-=3) { jTextArea1.append(i+"\t"); } </pre> <p>Code 2:</p> <pre> inti; for(i=7; i>1; i-=3) { jTextArea1.setText(i+"\t"); } </pre>	2
g	<p>Find the output of the following and How many times will the loop execute?</p> <pre> int value1 =5,value2=21; do { JOptionPane.showMessageDialog(null,value1+value2); } </pre>	1

		<pre>value1=value1+2; value2=value2-2; }while(value1<=value2);</pre>	
	h	<p>Shalini is learning Java programming language, as it allows developers to write code that can run on any machine, regardless of architecture or platform. Help her in finding solutions of her problems:</p> <p>Help her in writing Java code to initialize two integer variables named val1 and val2 with values 15 and 20 respectively. Increase the value of val1 by 15 and decrease the value of val2 by 15. Overwrite the value of val2 with its double value.</p>	1
	i	<p>Rewrite the following code using if/else statement:</p> <pre>int day=Integer.parseInt(jTextField1.getText()); switch(day) { case 1: case 2: case 3: case 4: case 5: jOptionPane1.showMessageDialog(this, "Working Day"); break; case 6: case 7: jOptionPane1.showMessageDialog(this, "Off Day"); break; default: jOptionPane1.showMessageDialog(this, "Invalid Entry"); }</pre>	1
9	a	Predict the output of the following two codes:	1
		Code 1	Code 2
		<pre>int n=2,f=0,i; for(i=1;i<=n;i++) { f=f*i; System.out.print("\t"+f); System.out.print("\t"+i); }</pre>	<pre>int n=2,f=0,i; for(i=1;i<=n;i++) { f=f*i; jTextField1.setText("\t"+f); jTextField2.setText("\t"+i); }</pre>
	b	<p>Write Java statement to extract selected item from a given</p> <ol style="list-style-type: none"> listbox named "jList1." Combobox name jComboBox1. 	1

c	<p>Write Java statement to get the value from</p> <ol style="list-style-type: none"> i. Password field named jPasswordField1. ii. TextArea named jTextArea1 	1
d	<p>Write the output of the following HTML code.</p> <pre> <ol start="3" type="i" > Bake the mixture in oven for an hour Remove from oven Allow the mixture to stand for ten minutes Serve </pre>	1
e	<p>Write examples of any one property and any one method of jTextAreacomponent</p>	1
f	<p>Distinguish between ComboBox and ListBox. When would you prefer using them over Radiobutton and Checkbox?</p>	1
g	<p>What will displayed in jTextField1 when the following code is executed?</p> <pre> int x=3,y=6,z=0; if(x>3) z = z + 1; if((x<4) && (y>6)) z = z + 2; if(x>2 && y<6) z = z + 3; if((x<3) (y>6)) z = z + 4; jTtxtField1.setText(""+z); </pre>	1

