Sample Paper
COMPUTER SCIENCE (Theory)
Class-XII
SET - 3

1(a)	Which protocol is used for the transfer of hyper text documents on the internet?	2
Ans:	HTTP(Hyper Text Transfer Protocol)	
(b)	Which transmission medium should be used to transfer data across two continents at very high speed?	2
Ans:	Satellite	
(c)	Two neighbourhood schools, at a distance of 120 meters from each other, decide to join their LANs using UTP cable so that they can share their e-learning resources. But after joining their LANs they are not able to share the resources due to loss of signal in- between. Which device should they use so that signal is amplified in-between?	2
Ans:	Repeater	
(d)	Which of the following software are Open Source: Linux, MS Windows 7, Photoshop, MySql.	2
Ans:	Linux and MySql	
(e)	Distinguish between Open Source software and Proprietary software with reference to customizability of the software.	1
Ans:	Source code of Open Source software is available to the user and therefore the user can customize it according to his/her own requirements and capability. Whereas the source code of proprietary software is available only with its vendor/developer. There- fore, it cannot be customized by the user as per his/her requirements.	
(f)	Name any four Indian scripts included in Unicode.	1
Ans:	Devnagari, Bengali, Gumukhi, gujarati, Oriya, Tamil, Telugu, Kannada, Malayalam	
(g)	Sujata says that the following numbers indicate an address: 208.77.188.166 What is the above address called? To which object/device is it assigned?	2
Ans:	The above address is called an IP Address or Internet Protocol Address. It is a numerical label that is assigned to device participating in a network.	
2(a)	Ms. Samhita has developed a Java application through which the students of her school can view their marks by entering their admission number. The marks are displayed in various text fields. What should she do so that the students are able to view but not change their marks in text fields?	2
Ans:	She should make the text boxes showing marks non-editable. OR She should deselect the editable property of corresponding text boxes.	
(b)	What is the purpose of break statement in a loop?	2
Ans:	Break statement is used to terminate the loop.	
(c)	What is the use of <H1 > tag in an HTML document?	2
Ans:	<H1> tag is used to display heading with largest font size.	
(d)	What is XML?	2
Ans:	XML stands for extensible Markup Language. It is used to store and transport data.	

(e)	What will be the values of x and y after execution of the following code:
	int x, y=0;
	for (x = 1;x<=5; ++x)
	y=x++;
	--y;
		2

Ans:	X=7 Y=4	
(f)	Write code in Java that takes principal, rate, and time as input from textfields and displays simple interest.	2
Ans:	double Principal,Rate,SInterest; byte Time; Principal=Double.parseDouble(jTextField1.getText()); Rate=Double.parseDouble(iTextField2.getText()); Time=Byte.parseByte(jTextField3.getText()); SInterest=(Principal*Rate*Time)/100; jTextField4.setText(Double.toString(SInterest));	
(g)	Mention the purpose of each of the following HTML tags. , <LI>, <HR>, <TABLE>	2
Ans:	 : ✓ To insert a line break <LI>: ✓ <LI> To define a List ltem in an Ordered or Unordered List <HR>: ✓ <HR> To place a horizontal line in an HTML document <TABLE>: ✓ <TABLE> To create a table in an HTML document.	
3(a)	Which command is used in MySql to make the changes in database permanent?	2
Ans:	COMMIT	
(b)	While creating a table 'Customer' Simrita forgot to set the primary key for the table. Give the statement which she should write now to set the column 'CustlD' as the primary key of the table?	2
Ans:	ALTER TABLE Customer ADD PRIMARY KEY(CustID);	
(c)	What is the purpose of following SQL query: SELECT MAX(salary) FROM Emp;	
Ans:	This query displays the maximum value from the salary column of Emp table.	
(d)	Can a table have multiple primary keys'? Can it have multiple foreign keys?	2
Ans:	Multiple Primary Keys - NO Multiple foreign keys - Yes	
(e)	In a Student table, out of RollNumber, Name, Address which column can be set as Primary key and why?	3
Ans:	RollNo can be set as primary key.	

	Reason: In a class roll number of a student is always unique for every student. Therefore it can be used to identify a row uniquely in the table.	
(f)	The ltem_No and Cost column of a table "ITEMS" are given below: ITEM_NO | COST 101 | 5000 102 | NULL 103 | 4000 104 | 6000 105 | NULL Based on this information output of the following queries: a) SELECT AVG(COST) FROM ITEMS; b) SELECT COST+100 FROM ITEMS WHERE lTEM_NO > 103;	2
Ans:	(a) AVG(COST) 5000 (b) COST+100 6100 NULL	
(g)	A table 'Customers in a database has 5 columns and no rows in it. What is its cardinality? What will be its cardinality if 4 rows are added in the table?	3
Ans:	✓ In the first case cardinality is 0. ✓ In the second case cardinality will be 4.	
4(a)	Define inheritance with reference to object oriented programming.	2
Ans:	Inheritance is the capability of a class (called derived Class) to inherit the properties of another existing class (called Base Class).	
(b)	A phone number, consisting of 10 digits, is stored in a string variable strPhone. Now it is required to store this phone number in a Long type variable IngPhone. Write a Java statement to do this.	1
Ans:	IngPhone=Long.parseLong(strPhone);	
(c)	Write the purpose of the following statement: jTextField1.setText("Informatics". substring(3));	2
Ans:	This statement places the substring of "Informatics" starting from third character in the text fieldjTextField1. So, this statement will place "ormatics" in the text field jTextField1.	

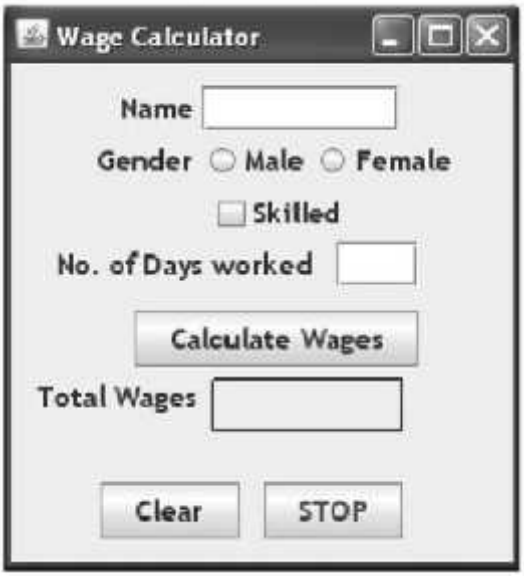
(d)	Rewrite the following program code using a for loop:
	int i=1,sum=0;
	while (i<10)
	{
	sum += i;
	i += 2;
	}
		1

Ans:	int i,sum=0;
	for(i=1;i<10;i+=2)
	sum+=i;	

(e)	The following code has some error(s). Rewrite the correct code underlining all the corrections made:
	int i,j=5;
	i==j+5;
	if(i=j)
	{
	jTextField1.setText("i andj are unequal");
	jTextField2.setText("they are not equal"); break;
	}
	else jTextField1.setText("i and j are equal");	

Ans:	int i,j=5;
	i=j+5;
	if(i==j)
	{
	jTextField1.setText("i and j are unequal");
	jTextField2.setText("they are not equal");
	break;
	}
	else jTextField1.setText("i and j are equal");	

(f)	What will be the contents of jTextField1 and jTextField2 after executing the following code:
	jTextField1.setText(Math.round(2.3)+"");
	jTextField2.setText(Math.pow(2,3)+"");
		1
		2

Ans:	jTextField1:2 jTextField2:8.0	
(g)	Richika is a programmer at Alpha Builders. To calculate wages to be paid to labourers she has developed the following GUI in Netbeans.  Male and Female labourers are respectively paid at the rate of Rs.14O/- per day and Rs. 160/ - per day. Skilled labourers are paid extra at the rate of Rs.50/- per day. (i) What should be done so that only one of the radio buttons (Male and Female) can be selected at a time? (ii) Write code to do the following: a. Calculate and display the Total wages in the corresponding label when the "Calculate	2

	Wages" button is pressed. b. Clear the Name and No. of days worked text fields. c. Close the application when the "STOP" button is pressed. (You can assume any suitable names for various controls on the form.)	

Ans:	(i) Both the radio buttons should be put in a button group.
	(ii) (a)
	int WageRate, NoOfDays, TotalPay;
	if (radMale.isSelected())
	WageRate = 140;
	else
	WageRate = 160;
	if (chkSkilled.isSelected())
	WageRate += 50;
	NoOfDays = Integer.parseInt(txtDays.getText());
	TotalPay = NoOfDays*WageRate;
	lblWages.setText(TotalPay+"");
	(b) txtName.setText("");
	txtDays.setText("");
	(c) System.exit(0);	

5(a)	What is the purpose of DROP TABLE command in SOL? How is it different from DELETE command?	2
Ans:	The DROP command is used to remove a table **Difference:** ✓ DELETE command removes rows from a table while DROP TABLE removes the table (rows as well as the structure) ✓ DELETE is a DML command while DROP TABLE is a DOL command ✓ The effect of DELETE command can be rolled back while the effect of DROP TABLE cannot be rolled back	
(b)	"PrincipalName" is a column in a table "Schools". The SQL queries SELECT count(*) FROM Schools; and SELECT count(Principal) FROM schools; Give the result 28 and 27 respectively. What may be the possible reason for this? How many records are present in the table - 27 or28?	4
Ans:	✓ The possible reason for this is that one record in the table has NULL in the PrincipalName column. ✓ Number of records present in the table is 28.	
(c)	Consider the table projects given below. Write commands in SQL for (i) to (iv).	2

ID	ProjName	ProjSize	StartDate	EndDate	Cost
1	Payroll-MMS	Medium	2006-03-17	2006-09-16	60000
2	Payroll-ITC	Large	2008-02-12	2008-01-11	500000
3	IDMgmt-LITL	Large	2008-06-13	2009-05-21	300000
4	Recruit-LITL	Medium	2008-03-18	2008-06-01	50000
5	IDMgmt-MTC	Small	2007-01-15	2007-01-29	20000
6	Recruit-ITC	Medium	2007-03-01	2007-06-28	50000

	(i) To display all information about projects of Medium ProjSize. (ii) To list the ProjSize of projects whose ProjName ends with LITL. (iii) To list ID, name, size and Cost of all the projects in descending order of StartDate. (iv) To count the number of projects of cost less than 100000. (v) SELECT sum(Cost) FROM projects;	
Ans:	(i) SELECT * FROM projects WHERE ProjSize="Medium"; (ii) SELECT ProjSize FROM projects WHERE ProjName LIKE "%LITL"; (iii) SELECT ID,ProjName,ProjSize,Cost FROM projects ORDER BY startdate DESC; (iv) SELECT count(*) FROM projects WHERE cost<100000; (v) 980000	
6(a)	Write an SQL query to create a table 'TEAMS' with the following structure:	1

Field	Type	Constraint
TeamCode	Varchar(5)	Primary Key
TeamName	Varchar(20)	
TeamLeader	Varchar(20)	
NoOfMembers	Integer	
Team_Symbol	Char(1)	NotNull

Ans:	CREATE TABLE TEAMS(TeamCode varchar(5) primary key,TeamName varchar(20),TeamLeader varchar(20), NoOfMembers integer, Team_Symbol char(1) not null);	
(b)	In a database there are two tables 'Company' and 'Model' as shown below: **Company**	

CompID	CompName	CompHO	ContPerson
1	Titan	Okhla	C.B.ajit
2	Maxima	Shahdara	V.P.Kohil
3	Ajanta	Najafgarth	R.Mehta

Model

ModelID	CompID	ModelCost
T020	1	2000
M032	4	2500
M059	2	7000
A167	3	800
T024	1	1200

(i) Identify the foreign key column in the table model.
(ii) Check every value in ComplD column of both the tables. Do you find any discrepancy?

Ans:	(i) CompID (ii) In the 2nd row of model table the value of CompID does not exist in the table Company.	
(c)	Consider the tables DOCTORS and PATIENTS given below:	1 1 1 1

DOCTORS

DocID	DocName	Department	OPD_Days
101	M.Panday	ENT	TTS
102	G.P.Gupta	Paed	MWF
201	C.K.Sharma	Ortho	MWF

PATIENTS

PatNo	PatName	Department	DocID
1	Neeraj	ENT	101
2	Mohit	Ortho	201
3	Ragini	ENT	101
4	Mohit	Paed	102
5	Nandini	Ortho	201

With reference to these tables, write commands in SQL for (i) and (ii) and output for (iii) below:

(i) Display the PatNo,PatName ans corresponding DocName for each patient.

(ii) Display the list of all patients whose OPD_Days are MWF.

(iii) select OPD_Days, Count(*) from Doctors, Patients where Patients.Department = Doctors.Department Group by OPD_Days;

Ans:

(i) SELECT PatNo,PatName,DocName FROM patients, doctors WHERE patients.DocID=doctors.DocID;

(ii) SELECT patients.* FROM patients,doctors WHERE patients.DocID=doctors.DocID AND OPD_Days='MWF';

(iii)

OPD_Days	count(*)
MWF	3
TTS	2

7(a) How is e-learning beneficial to students. Write one point — 1

Ans:

- ✓ Students can learn at their own pace.
- ✓ A lesson can be revised any number of times at students' convenience.
- ✓ Students can learn lessons at their homes at their convenient time.

(b) List two features of a good interface. — 2

Ans:

- ✓ It should have pleasant color combination so that the user likes to use it.
- ✓ It should have all the relevant options for all the required fields so that the user is at ease while entering the data.

(c) Prikshit works for a school. She wishes to create controls on a form for the following functions. Choose appropriate controls from Text box, Label, radio button, Check box, List box, Combo box, Command button and write in the third column. — 2

S.NO	Control used to	Control
1	EnterAdmission Number	
2	Select Stream	
3	Select Subjects	
4	Clear the Form	

Ans:

S.NO	Control used to	Control
1	EnterAdmission Number	TextField
2	Select Stream	ListBox/Combo Box/Radio Button
3	Select Subjects	Check Box
4	Clear the Form	Button