SAMPLE PAPER
INFORMATICS PRACTICES
CLASS XII
2018 – 2019

Time allowed : 3 Hours   **Max. Marks : 70**

General Instructions:

All questions are compulsory, however question number 2, 4 and 6 have internal choices.

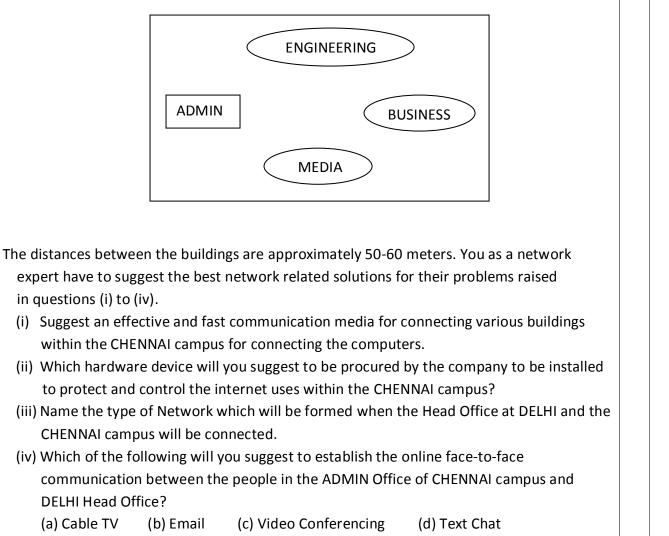|		
1.	**(a)** Show the layout for connecting five computers in a **Star** and **Bus** Topology of networks.	**1**
	(b) Out of the following, which is the **fastest** (i) wired and (ii) wireless medium of communication? Infrared, Coaxial Cable, Ethernet Cable, Microwave, Optical Fiber	**1**
	(c) **Deepanjan Sahu** is not aware about the **Cyber crime**. Guide him by finding out all the activities from the followings, which all come under the **Cyber crime.** (i) Stealing away a brand new hard disk from a showroom. (ii) Getting in someone's social networking account without his consent and posting on his behalf. (iii) Secretly copying data from server of a organization and selling it to the other organization. (iv) Looking at online activities of a friend's blog.	**1**
	(d) Which of the following are **Open Standards**? (a) .WMA (b) .JPEG (c) . DOC (d) .HTML	**1**
	(e) **Shivam Mundhra** of **Purulia** is the proprietor of **'Brilliant Education Services'**, which is an educational organization and it has its Head Office at **DELHI**. It is planning to setup its new campus at **CHENNAI**. The **CHENNAI** campus has 4 main buildings - ADMIN, ENGINEERING, BUSINESS and MEDIA as shown in the figure given below: **CHENNAI** Campus :	**4**

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The distances between the buildings are approximately 50-60 meters. You as a network expert have to suggest the best network related solutions for their problems raised in questions (i) to (iv).

(i) Suggest an effective and fast communication media for connecting various buildings within the CHENNAI campus for connecting the computers.

(ii) Which hardware device will you suggest to be procured by the company to be installed to protect and control the internet uses within the CHENNAI campus?

(iii) Name the type of Network which will be formed when the Head Office at DELHI and the CHENNAI campus will be connected.

(iv) Which of the following will you suggest to establish the online face-to-face communication between the people in the ADMIN Office of CHENNAI campus and DELHI Head Office?

(a) Cable TV   (b) Email   (c) Video Conferencing   (d) Text Chat

(f) **Khushi Sharma** is not sure about the differences between a **Freeware** and an **Open Source Software** in terms of their cost and customizability. Help her to understand the facts by writing the differences.		**2**
2.	**(a)** Write down the differences between **while loop** and **do-while loop** in Java.	**2**
	OR	
	(a) Mention the advantages of using **if else statement** over **switch statement**.	
	(b) Evaluate the following **expressions**, if the values of the variables are: a=2, b=3 and c=9 (i) a – (b++)*(--c); (ii) a*(++b)%c;	**2**
	OR	

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(b) Rewrite the following Java code by using **ternary operator**.

```
if(price<=7500)
    GST=price*0.12;
else
    GST=price*0.18;
```

(c) **Ridhima Singh** and **Rudra Pratap Singh** of **Purulia** work for an IT company and design Web applications for that company. They have written the given **XML** code. Observe the code and answer the questions that follow:

```
<School>
        <class std = "XII" stream= "COMMERCE">
                <age>  16  </age>
                <marks>  98%  </marks>
                <age>  17  </age>
                <marks>  93%  </marks>
        </class>
        <class std = "XII" stream= SCIENCE>
                <age>  15  </age>
                <marks>  94.5%  </marks>
                <age>  16  </age>
                <marks>  90%  </marks>
        </class>
</school>
```

(i)   Is this code a Well-Formed code or not? Justify your answer.

(ii) How these tags or elements are different from HTML tags or elements? Write any two point of differences.

(iii) Mention the name of any one child element and name of any one attribute from the above code.

3

OR

(c) Answer the **questions** given below:

(i)   Which element of **XML** document encloses all other elements within it? What is its significance?

(ii) Identify the **error(s)** in the following HTML code. Also write the correct code:
```
<Body color = "Pink" Text = "Blue">
```

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	(d) The following code has **error(s)**. Rewrite the correct code underlining all the **corrections** made:
	
	Int m = 5; n = 2, r = 0;
	while(n =! 0)
	{
	   r = m % n;
	   m == n;
	   n = r;
	}
	jTextField1(" " + m);
		2

	OR	

	(d) What will be the content of **jTextField1** and **jTextField2** after executing the following code:
	String AB="Information Technology";
	String CD="World Class";
	int x=CD.length();
	String EF=AB.substring(x);
	jTextField1.setText(EF.concat(CD.substring(5)));
	jTextField2.setText(CD.concat(EF));	

	(e) Given a string object namely **'Amount'** having value as **"93561"** stored in it. What will be the result of the following Java statement?
	   JOptionPane.showMessageDialog(this, " " + Amount.length( ) +
	   Integer.parseInt(Amount));
		1

3.	**(a)** How is **NULL** value different from **0 (zero)** value?	1
	(b) Riya Agarwal has started learning MySQL and she is little bit confused about the CHAR and VARCHAR data types and their size. She has created a table named Member. The table has two columns named Hobby1 of data type VARCHAR(15) with a value "Games" and Hobby2 of data type CHAR(15) with a value "Music" stored in them. Help her by telling that how many characters are occupied by the columns Hobby1 and Hobby2 respectively.	1
	(c) Given **'Employee'** table as follows: 	2

Employee_ID	NAME	Commission
101	Md Raghib	NULL
102	Shashank Khanna	8900
103	Priyanshu Das	NULL

What **values** will the following statements return?
(i) SELECT COUNT(*) FROM Employee;

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	(ii) SELECT COUNT(Commission) FROM Employee;	
(d)	Differentiate between **Candidate Key** and **Primary Key**.	1
(e)	What effect does **SET AUTOCOMMIT** have in transactions?	2
(f)	Find the **output** of the following MySQL statements based on the following **LOAN** table:	2

SL	NAME	AMOUNT	INSTALLMENTS	RATE	STARTDATE
1	Suraj Agarwal	300000	36	12.00	2009-07-19
2	Kashish Agarwal	500000	48	10.00	2008-03-22
3	Nafeel Ayaan	300000	36	NULL	2007-03-08
4	Akansha Mishra	800000	60	10.25	2008-12-06
5	Vedansh Shah	200000	36	12.50	2010-01-03
6	Fahad Arif	700000	60	12.75	2008-06-05
7	Vidhi Agarwal	500000	48	NULL	2008-03-05

	(i) SELECT RIGHT(Name, 5) FROM Loan WHERE Installments=48 OR Rate IS NULL;	
	(ii) SELECT INSTR(Name, 'is') FROM Loan WHERE Amount IN(500000, 250000, 800000);	
	(iii) SELECT DAYOFMONTH(Startdate) FROM Loan WHERE Rate IS NULL;	
	(iv) SELECT ROUND(Rate, 0) FROM Loan WHERE Rate=60;	
(g)	Write the **UPDATE** statement in MySQL to increase the marks of all those students by 5 in the **''Marks''** column of the **"Exam"** table who have scored less than 40 marks.	1
4. **(a)**	Write equivalent **Java expression** for the following mathematical expression. $s = ut + \frac{1}{2} ft^2$	1
	OR	
(a)	Evaluate the following **Logical Expression** in Java. (5 != 10) && ((3 == 2 + 1) || (4 < 2 + 5))	
(b)	What are the benefits of Inheritance in **Object Oriented Programming** Languages, such as Java?	2
	OR	
(b)	Define **Database Connectivity**.	
(c)	What is the return value of the following functions, when executed? (i) Math.pow(3.0, 2.0) (ii) Math.round(7.559)	2
	OR	
(c)	Identify the name of the **class** and **object** from the given code. Also write the **purpose** of the code. Town Purulia = new Town( );	

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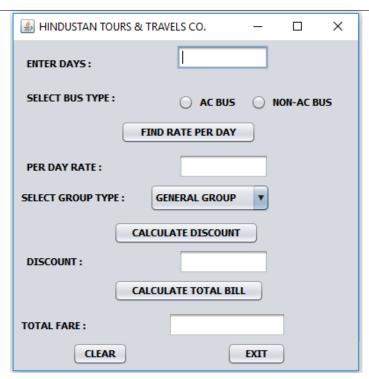

(d)	Give the **value** of variable S after executing the following Java code. Also find how many times the given **loop** will execute?
	
	int P = 8, Q = 10, S = 4, T = 5;
	while(P <= Q)
	{
	    if(P % 2 == 0)
	        S = S + T;
	    else
	        S = S – T;
	    P = P + 1;
	}
		2

	OR	
(d)	Rewrite the above code by using **for loop**, without changing the output of the given code.	

(e)	**Medhawi Rajgaria** wants to rewrite the given code by using **if … else if** statement. Help her by doing so.
	
	int ROLL = Integer.parseInt(rollTF.getText( ));
	switch(ROLL)
	{
	    case 12:
	        nameTF.setText("Anish Kumar Singh");
	        break;
	    case 16:
	        nameTF.setText("Shiwam Agarwal");
	        break;
	    case 21:
	        nameTF.setText("Dipika Goenka");
	        break;
	    default:
	        nameTF.setText("Akansha Agarwal");
	}
		2

(f)	**Vanshika Tantia** and **Shreela Jalan** both are IT professionals. They have designed a GUI application for their client 'Hindustan Tours & Travels Company', which is given below:	**6**

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- The company provides two types of buses namely AC and Non-AC and charges the fare as Rs. 11000 and Rs. 15000 per day respectively.
- The discount given by the company to a particular group is as follows:

Group Type	Discount
General Group	Nil
Student Group	15%
Women Group	20%

Write code for the following tasks:

(i) To find and display the per day rate of the bus, depending upon the type of bus selected by the user.

(ii) To calculate and display the discount, according to the arrangement given above after selecting the type of group from the given Combo Box.

(iii) To calculate and display the total Fare, considering the number of days entered in the first Text Field. Total Fare is to be calculated as:

Total Fare = Days * Per Day Rate - Discount

(iv) To clear all Text Fields and Radio Buttons when the Clear button is clicked.

(v) To terminate the Java application when the Exit button is clicked.

5.	(a) **Rahul Saraogi** has ceated a table named **worker** which contains a field called **wname**. Write MySQL queries for the followings:	2

(i) To show all the names of the workers which contain the string 'ch' in it.

(ii) To display all the names of the workers which contain exactly 5 characters and also the second characters is 'o' (such as Gopal or Mohan).

(b) Given a table named **Cricket** below:

PId	PName	Matches
P01	Himangshu Banerjee	296
P06	Mehul Agarwal	245
P07	Abhishek Chatterjee	162
P12	Md Sams Tabrez	287

Based on the above table, **identify** with reasons the incorrect MySQL commands from the followings:

DELETE * FROM Cricket;

DELETE FROM Cricket WHERE Matches >= 250;

DELETE FROM Cricket;

DELETE PId, PName, Matches FROM Cricket WHERE PName LIKE 'K%';

2

(c) consider he tale **BUSINESS** given below and write MySQL commands for (i) to (iv) and output for (v) to (vi)

CODE	NAME	TYPE	CAPITAL	BANKLOAN	DATEOFSTART
B1001	Chirag Tantia	Textile	5500000	2500000	2010-06-24
B1005	Isha Agarwal	Medicine	4200000	NULL	2012-07-17
B1007	Harshit Banka	Household	3700000	1700000	2011-01-30
B1003	Om Lohariwal	Automobile	8600000	3200000	2009-04-08
B1006	Saket Beria	Electrical Goods	6000000	4500000	2012-01-15

(i) To count number of business persons whose bank loan is less than the half of the capital.

(ii) To list the Name, Type and Dateofstart for all the business persons whose business is started in 2012.

(iii) To display the name of the business persons and their capital who have started their business in the month of January.

(iv) To add a new record with the following values:

'B1009', 'Ishika Mallick', 'Grocery', 3200000, NULL, '2015-07-14'

(v) SELECT Name, Capital FROM Business WHERE Bankloan BETWEEN 4500000 AND 6000000;

(vi) SELECT Type, Capital FROM Business WHERE Type LIKE '%o%';

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6. **(a)** Observe the following **STUDENTS** and **EVENTS** tables carefully and write the answers of

2

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the questions that follows:

STUDENTS	
RNO	**NAME**
1	Saloni Churiwala
2	Utsav Soni
3	Muskan Singodia

EVENTS	
EVENTCODE	**EVENTNAME**
1001	Programming
1002	IT Quiz

(i) Find the Degree and Cardinality of the **Cartesian product** of both the tables.

(ii) Observe the **EVENT** table carefully and write the name of the most appropriate column, which can be considered as primary key.

(b) Below are the tables **Vehicle** & **Travel**. Write queries or outputs for the given questions:

Table : VEHICLE

VCODE	**VEHICLETYPE**	**PERKM**
V01	VOLVO BUS	150
V02	AC DELUX BUS	125
V03	ORDINARY BUS	80
V05	SUV	30
V04	CAR	18

Note :- PERKM is Freight Charges per kilometer

Table : TRAVEL

PNO	**PNAME**	**TRAVELDATE**	**KM**	**VCODE**	**NOP**
101	Palak Mall	2017-12-13	200	V01	32
103	Samiksha Poddar	2016-05-26	120	V03	45
105	Shibam Mukherjee	2016-11-17	450	V02	42
102	Shreya Mallick	2018-09-30	80	V02	40
107	Kangan Lohariwal	2018-10-19	65	V04	2
104	Chirag Mall	2018-02-23	90	V05	4

Note :-
- *KM denotes kilometer travelled*
- *NOP denotes number of passengers travelled n the vehicle*

(i) To display the name of the passengers and type of vehicle of the passengers who have traveled more than 150 km.	**2**

OR

(i) Find the output of the given query:

SELECT Pno, Pname, Vehicletype from Vehicle, Travel WHERE
Vehicle.Vcode=Travel.Vcode AND Nop BETWEEN 32 AND 42;

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	(ii) To list the type of vehicle, date of travel and number of passengers whose per kilometer charge is not less than 100.	**2**
	OR	
	(ii) To show all the information of the passengers who have opted to travel by Bus.	
	(iii) To show Pno, Pname, Vehicle type of those passengers who have travelled before 2017-12-13.	**2**
	OR	
	(iii) Write the output of the following: SELECT Vehicletype, Nop from Vehicle, Travel WHERE Vehicle.Vcode=Travel.Vcode AND YEAR(Traveldate) > 2016;	
	(c) Write MySQL command to create a table named **Library** with the following structure:	**2**

Column Name	Data Type	Size	Constraint
BookID	VARCHAR	8	PRIMARY KEY
BookName	VARCHAR	30	NOT NULL
Price	DECIMAL	8,2	
DateofPub	DATE		
NoofCopy	INTEGER	3	

	OR	

	(c) **Chirag Jhawar** is learning to write comments in MySQL. Help him by rewriting the given comments by using different possible way:
	  (i) −− This is a Single Line Comment in MySQL
	  (ii) −− This is a Multi Line Comment in MySQL
	     −− This is a Non-executable part in MySQL	

7.	**(a)** Write one advantage and one disadvantage of **e-Governance** for the people of remote areas of the country.	**2**
	(b) Write the name of one **URL** for **e-Learning** and **e-Business** each.	**1**

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(c) Amaan Khan is creating a **GUI form** for his company. Help him to choose most appropriate controls from ListBox, ComboBox, TextField, TextArea, RadioButton, CheckBox, Label and Command Button for the following functions:	**2**

SL NO	FUNCTION	CONTROL
1	To select citizenship from a list of countries	
2	To show message 'Enter name' in front of a Text Field	
3	To allow the selection of one or many food items	
4	To allow entering feedback in the form of paragraph	

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