

COMMON PRE-BOARD EXAMINATION 2017-2018

INFORMATICS PRACTICES

CLASS XII

Time Allowed: 3 hours

Maximum Marks: 70

General Instructions:

1. Please check that this question paper consists of 7 pages with 7 questions.
2. Please write down the serial number of the all questions (including sub divisions) before attempting it.
3. The subdivisions of a question should be written together.
4. Remember to write neatly and legibly.

- 1 a Technical Solutions Incorporated is planning to link its front office situated in a city with its store located in a hilly region where cable connection is not feasible. Suggest an economic way of connection with reasonable high speed. Also mention the category of communication media to which it belongs to. 1
- b Mr Kapil, Systems Manager of Model Corporate Inc experienced an extremely slow communication between his HR office and Sales division along with signal drop. These offices are 120 meters apart from each other and connected by Ethernet cable. 1
 - i Suggest him a device which can be installed between the offices for smooth communication.
 - ii What type of network is formed by this kind of connectivity out of LAN, MAN and WAN?
- c Which of the following units measures the speed with which data can be transmitted from one node to another node in a network? Also give the expansion of the suggested unit. 1
 - a. Mbps b. KMph c. MGps
- d Write one snooping method used by hackers and crackers. 1
- e Give reason: 2
 - i For long distance microwave communication, high towers are built and microwave antennas are put at the top.
 - ii Data transmitted using Optical Fiber Cable is not susceptible to electromagnetic fields.
- f i Differentiate between True type font and Open type font. 4
 - ii What is the importance of Cyber Law?
- 2 a i Name and explain the usage of any one relational and one logical operator in Java. 4

- ii Write Java statements to accomplish the following: (Assume that the variables num1,num2,num3,dividend and divisor used, are declared already)
 - a. Assign the sum of num1 and num2 to num3 and increment the value of num1 by 1 after calculation. Use only one statement.
 - b. Calculate the remainder after dividend is divided by divisor and assign the result to dividend.

- b Rewrite the following switch-case statement using if-else if statement in Java. 2

```

double Amt,Tax;
int Tour=Integer.parseInt(jTF1.getText());
String type;
switch(Tour)
{
default: type="General";
        Amt=2000;
        Tax=11;
        break;
case 1: type="Combo";
        Amt=10000;
        Tax=12;
        break;
case 2: type="Value";
        Amt=9000;
        Tax=10;
        break;
case 3: type="Promotion";
        Amt=1000;
        Tax=2;
        break;
}
System.out.println("Selected Tour is\t"+type);

```

- c i Mention the type of listing used in the HTML output, given below. Mention the tag (any one) and attributes (any two) used for attaining the given list. 4
 - III. MATHS
 - IV. INFORMATICS
 - V. MMWT
- ii State one advantage and disadvantage each, of XML.

- 3 a Mention any two benefits of using a DBMS. 1
- b What is the difference between SQL and MySQL. 1
- c Explain the difference between Where and Having clauses with a suitable example each. 4

Aniket needs to meet the following requirements in MySQL but he is not clear about Group by. Explain it for him.
 Also from the list of his requirements given below, select the ones for which he

needs to use a Group by clause.

- i To calculate the gross salary of all the employees in his department.
- ii To make a report with the list of the total number of items purchased for each department.
- iii To list the departments with more than 25 employees.
- iv To count the number of staff with salary less than 25000.

d Consider the given table LIBRARY and predict the output of the following queries. 4

No	Title	Author	Type	Publisher	Qty	Price
1	Data Structure	Lipschutz	DS	McGraw	4	217
2	Computer Studies	French	FND	Galgotia	2	275
3	Advanced Pascal	Schildt	PROG	McGraw	4	350
4	Dbase dummies	Palmer	DBMS	PustakM	9	230
5	Mastering C++	Gurewich	NET	BPB	3	195
6	Guide Network	Freed	PROG	ZPress	2	200
7	Mastering Foxpro	Srigal	DBMS	BPB	3	135
8	DOS Guide	Norton	OS	PHI	3	175
9	Basic for Beginners	Morton	PROG	BPB	1	40
10	Mastering Windows	Cowart	OS	BPB	3	25

- i SELECT UPPER(MID(AUTHOR,3,4)) FROM LIBRARY WHERE TYPE LIKE “%N%”;
- ii SELECT NO,RIGHT(TITLE,LENGTH(TYPE)) FROM LIBRARY WHERE QTY=3;
- iii SELECT INSTR(AUTHOR,”ON”) FROM LIBRARY WHERE TYPE IN(“PROG”, “OS”);
- iv SELECT COUNT(*) - COUNT(DISTINCT PUBLISHER) FROM LIBRARY;

4 a Name any two methods of a combo box. 1

b Find the output of the following code fragment: 1

```
byte a=5,b=0,c;
c=(byte) (-a++ * b--);
jTF1.setText(“Result is ” +c);
```

c Which feature of Object Oriented Programming is depicted below? 1

```
class baseClass
{
    int counter;
    baseClass()
    {counter=0;}
    public void factorial()
    {
        //function body
    }
}
```

```

class childClass extends baseClass
{
    void changeVal()
    {
        //function body
    }
}

```

- d i Find the output/result of the marked statements in the following Java code. 4

```

jTextArea1.setText(null);
String board="CBSE";
String Str="Informatics Practices";
board=board.concat(Str); //Statement 1
jTextArea1.setText(jTextArea1.getText()+Str.toLowerCase()); //Statement 2
int ln=jTextArea1.getText().length(); //Statement 3
String nStr=board.substring(16); //Statement 4

```

- ii Rewrite the following code using do-while loop.

```

int i, sum=2;
for(i=3;i<8;++i)
{
    if(i%4==0)
    {
        sum=Math.pow(sum,i);
        break;
    }
    else
        sum+=i/2;
}

```

- e The following code has some errors. Rewrite the correct code after underlining all the corrections made. 2

```

Int y=3;
Switch(y)
{
case 1= System.out.println("One");
case>2: System.out.println("Two");
case else: System.out.println("Invalid");
}

```

- f RajMahal Hotel computerized its Billing System. Given below is the data entry screen through which the Bill Amount is calculated. The rates are to be taken from the table given. 6

Rate	Breakfast	Lunch	Dinner
Veg	100	200	300
Non Veg	200	400	500

- i Write the code for Calculate button as per the following:
Amount is based on the Rate specified in the table and also the Type of Plate.
Service Tax =12% of Amount.
Total Bill amount=Amount + Service Tax.
- ii Write the code to clear all textfields, uncheck the checkboxes and set Veg as the default option.
- iii Write the code to exit the application. The message “Are you sure you want to Exit?”, should be displayed on the click of Exit button. Only if the user presses Yes button, the application should be closed.

5 a Explain the difference between Commit and RollBack with the help of an example. 2

b Consider the table WINTER_CLASS given below and write SQL statements for the requirements mentioned in (i) and (ii): (Assume relevant data type/size for fields if needed) 2

Activity	Ac_Code	Incharge	Cash	Date
FOODSTALL	101	GAURI	10000	2017-12-31
PAINTBALL	102	GIRI	8500	2017-12-25
SOCCER	103	SERU	9000	2017-12-20
JUMPING CASTLE	104	NIMIL	12000	2017-12-23

- i Aniket felt the need to restrict the users from entering NULL values in the Cash field.
- ii He wanted to delete the fields Activity and Ac_Code.(Write a single SQL statement)

c Consider the TABLE GARMENTS and write SQL queries for (i) to (iv): 4

GCODE	GNAME	SIZE	COLOUR	PRICE
111	TSHIRT	XL	RED	1400.00
112	JEANS	L	BLUE	1600.00
113	SKIRT	M	BLACK	1100.00
114	LADIES JACKET	XL	BLUE	4000.00
115	TROUSERS	L	BROWN	1500.00
116	LADIES TOP	L	PINK	1200.00

i Change the values in the record with GNAME as SKIRT, to the following values for the fields GCODE, SIZE and PRICE.

(117,S,1000.00)

- ii Display the details of the garments with SIZE XL and L.
- iii Display the GNAME if the PRICE is more than 1000.
- iv Display the SIZE and GCODE of the garments which have the substring "IR" in their GNAME.

d On the basis of the above table (Original one) write the outputs produced by executing the following queries. 2

- i SELECT SIZE, COUNT(*) FROM GARMENTS GROUP BY SIZE;
- ii SELECT COLOUR,COUNT(COLOUR) FROM GARMENTS GROUP BY COLOUR HAVING COUNT(*)>1;

6 a Write SQL query to create the table UNIVERSITY with the constraints listed. 2

COLUMN NAME	DATA TYPE	CONSTRAINT
AFFILIATION	INTEGER	PRIMARY KEY
NAME	VARCHAR(25)	
LOCATION	VARCHAR(20)	NOT NULL
PHONE NUMBER	INTEGER	
TYPE	CHAR(2)	CAN ONLY BE 'R' OR 'D'

b Consider the related tables (follow referential integrity) given below and answer the questions.

TABLE:HOLIDAYS

PKG_NO	LOC	DEP_AIRPORT	NO_DAYS	ST_DATE	DEP_DAY
T101	Tenerife	Manchester	7	21/5/02	TH
T102	Tenerife	Manchester	14	1/6/02	TU
C101	Corfu	Gatwick	14	11/10/02	SA
C101	Rhodes	Heathrow	7	15/6/02	MO

TABLE:PACKAGE

PACKAGENO	ACTIVITY	COSTPERDAY
T101	Sailing	300
K101	River Rafting	1200
T102	Volcano Exploration	530
C101	River Rafting	282
R101	Windsurfing	725

- i Aman tried to insert the following record into the table HOLIDAYS but he was not able to. What could be the possible reason? 1

R102,Moher,Dublin,2,23/10/02,MO

- ii What will be the output for the fields LOC and ACTIVITY, if an Equi-Join query is executed on the above tables? 1

- c Write SQL queries for (i) to (iii) 6

- i Display the ST_DATE along with the ACTIVITY for those whose ST_DATE is before MAY 2002.

- ii Display the Total Cost if the NO_DAYS is more than 10.

- iii Display the LOC, PACKAGENO and ACTIVITY for the packages not chosen at all.

- 7 a What could be the possible reason for the high dropout rates of e-learning courses? 1

- b How does e-Governance empower citizens? Write 2 points. 2

- c Anil is planning for his PG admission abroad. The criteria are given below: He can choose one University from the choices displayed. Packages can be multiple(priority based). 2

What controls in Java will you suggest for the following requirements:

Action	Control required
Mouse Click	
Type an application letter	
Select University	
Select Package	