

INTERNATIONAL INDIAN SCHOOL, DAMMAM
SECOND TERM EXAMINATION - 2017

SUB: INFORMATICS PRACTICES
CLASS: XII

MAX MARKS: 70
TIME: 3 HOURS

1. a) A School has 3 departments namely Admin, Hostel, Library. Out of telephone cable, Optical Fiber, Ethernet Cable, which communication medium is best for high speed communication between departments? 1
- b) Two neighborhood companies at a distance of 120 metres from each other decide to join their LANs using UTP cable so that they can share their 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 to establish proper connectivity? 1
- c) Which of the following software are Open Source: 1
Linux, MS Windows 7, Photoshop, MySql.
- d) Name any two Indian Scripts included in Unicode. 1
- e) Explain the term Firewall and Cyber Law. 2
- f) "Open Source Software developers work for the good of community". Is this statement true? Give reason. 2
- g) Distinguish between Phonetic text entry and Keymap based entry of typing Indian language text. 2
2. a) Write Java code to declare A and B as integer variables. Then, assign the value 45 to the variable A. Increase the value of A by 15 and store the increased value in B. 2
- b) Write code in Java that takes three numbers from three text fields and display its total and average in another two text fields. 2
- c) Write the value of 'p' after the execution of the following code: 1

```
int p;  
int q;  
q = 5;  
p = (7 * q++) % 4;
```

- d) What is the purpose of DEFAULT statement in a SWITCH statement? 1
- e) How many times the following loop will be executed? Write the output that will be generated by the code given below. 2

```
int x;
x = 7;
int y;
y = 10;
do
{
    System.out.println(x * y);
y++;
} while (y <= 10);
```

- f) What is the difference between the following statements (i) and (ii) 1
- i. A = 50;
- ii. if (A == 50)
B = 5;
- g) Consider the statement : 1
- Dress_code = "Uniform";
- i) What is the datatype of Dress_code?
- ii) Is 246 the same as "246"? Give reason.

3. a) What is the relation between database and table? 1
- b) Distinguish between Foreign key and Primary key with the help of a suitable example. 2

- c) Write SQL statement that gives the same output as the following SQL statement but use the 'IN' keyword. 1
- Select subcode From Group where book = 'Maths';

- d) Varun wants to make the database named 'HOSPITAL' active and display the names of all the tables in it. Write MySQL command for it. 1

- e) Consider the table 'Staff' given below: 2
- Table : Staff

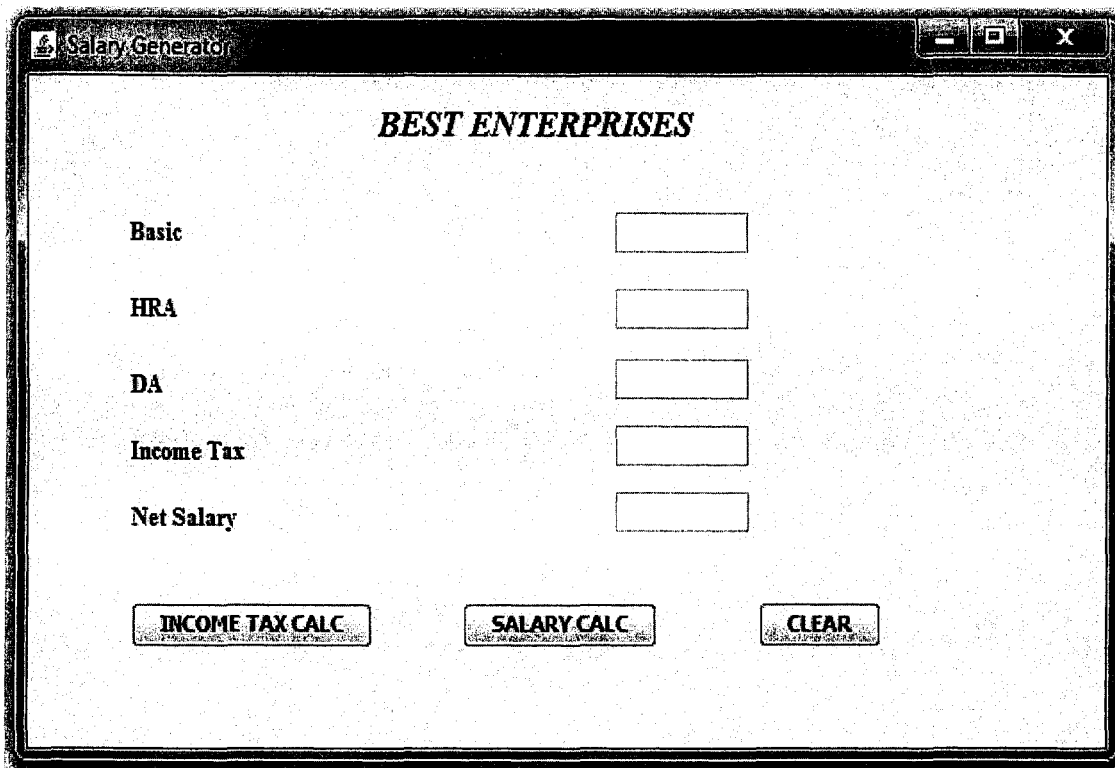
ID	Grade	Salary
I001	TGT	15400
I002	PRT	10500
I003	TGT	17500
I004	PGT	19000
I005	PGT	19500
I006	TGT	17000

- i.) Ms. Roopa wanted to display the maximum salary of each category. She entered the following SQL statement. Identify the error in the following and rewrite the correct statement.
`SELECT GRADE, SALARYFROM STAFF GROUP BY GRADE;`
- ii.) Suggest the suitable data types for the columns.
- f) Name the SQL commands used to : 2
- i) Permanently delete a table from the database.
- ii) To display unique values from a column.
- g) Mr. Arya created a table "PAYROLL" in a database with 6 columns and 15 1
 rows. After adding 3 more rows in the table, he deleted 2 columns from it. What are the degree and cardinality of this table now?
4. a) Write the value of 'c' after executing the following code: 2
- ```
int a;
int b = 10;
int num;
int c = 0;
for (a=1; a <= b; a = a +3)
{
 num = a % 2;
 if (num ==1)
 {
 c= c + 1 ;
 }
}
```
- b) What will be the contents of jTextField1 and jTextField2 after executing the 2  
 following code:
- ```
String m = "One & Only 1!!";
jTextField1.setText(m.length() + " ");
String n = "all the best";
jTextField1.setText(n.toLowerCase());
```
- c) Convert the following using 'for loop': 2
- ```
int z = 7, sum = 0;
do
{
 sum = sum + z ;
 z = z + 2;
 System.out.println(" " + z);
}
while (z <= 12);
```

d) Find the value of x and c after executing the following code: 2  
`int x, c;  
for (x = 10, c = 20; c >= 10; c = c - 2)  
x++;`

e) Evaluate the following C++ expressions and find the values of 'c' and 'f': 2  
a = 5, b = 3 and d = 1  
i)  $c = a - (b++) * (--d)$   
ii)  $f = (++b) * b - a$

5. a) Define Polymorphism with example. 2  
b) Surjeet is working as a programmer in BEST ENTERPRISES. He has designed a software to compute the Income Tax and Net salary for the employees. A screenshot is shown below:



BASIC salary, HRA, DA are entered by the user in the respective textfields. Income tax and Net salary are calculated and displayed by the program.

Write the code to do the following:

- i.) When 'INCOME TAX CALC' button is clicked, Income tax should be calculated and displayed in the text field. Income tax is 5% of the Basic salary. 2
  - ii.) When 'SALARY CALC' button is clicked, Net salary should be calculated and displayed in the respective text field. Net salary = (Basic + HRA + DA) - Income Tax 2
  - iii.) When 'CLEAR' button is clicked, set the default value in Basic text field as '0' and clear all other text fields. 2
- c) What are the different selection modes available in a List control? 2
6. a) What is the purpose of DROP Table command in SQL? How is it different from DELETE command? 2
- b) Consider the table Projects given below. Write commands in SQL for (i) to (iv) and output for (v) to (viii)

Table : Projects

| ID | ProjName     | ProjSize | StartDate  | EndDate    | Cost   |
|----|--------------|----------|------------|------------|--------|
| 1  | Payroll-MMS  | Medium   | 2016-03-17 | 2016-09-16 | 60000  |
| 2  | Payroll_ITC  | Large    | 2014-02-14 | 2014-06-11 | 500000 |
| 3  | IDMgmt_LITL  | Large    | 2015-11-12 | 2016-03-02 | 300000 |
| 4  | Recruit_LITL | Large    | 2015-07-08 | 2015-11-11 | 50000  |
| 5  | Recruit_ITC  | Small    | 2017-02-01 | 2017-05-06 | 200000 |

- i) To display the ID, name of the project along with the cost for the Large size projects. 1
- ii) To display all information of the projects whose cost is more than 250000. 1
- iii) To count the number of projects in Medium size. 1
- iv) To display the ProjName, Projsize and cost of the projects that were started after 1<sup>st</sup> January 2016. 1
- v) *SELECT MAX(COST) FROM PROJECTS;* 1
- vi) *SELECT MID(ProjName, 4,3) FROM PROJECTS;* 1
- vii) *SELECT ProjSize, COUNT (\*) FROM PROJECTS GROUP BY ProjSize;* 1
- viii) *SELECT ID, ProjSize FROM PROJECTS WHERE ProjName like '%IT%';* 1

7. a) Write SQL query to create a table 'EVENT' with the following structure: 2

| Field     | Type        | Constraint  |
|-----------|-------------|-------------|
| EventID   | Varchar(5)  | PRIMARY KEY |
| EName     | Varchar(30) | NOT NULL    |
| Location  | Varchar(25) |             |
| ClientID  | Integer     |             |
| EventDate | Date        |             |

- b) Consider the tables given below:

**Table: Faculty**

| TeacherID | Name          | Address      | State  | PhoneNo    |
|-----------|---------------|--------------|--------|------------|
| T101      | Savita Sharma | Adarsh Nagar | Delhi  | 9123452631 |
| T102      | Deepak Ghai   | Vikas Vihar  | Mumbai | 8931245602 |
| T103      | MahaLakshmi   | GandhiNagar  | Mumbai | 8912456632 |
| T104      | Simi Arora    | K K Nagar    | Delhi  | 9412635211 |

**Table : Course**

| CourseID | Subject                       | TeacherID | Fee  |
|----------|-------------------------------|-----------|------|
| C101     | Introductory Mathematics      | T101      | 4500 |
| C103     | Physics                       | T101      | 5000 |
| C104     | Introductory Computer Science | T102      | 4000 |
| C105     | Advance Computer Science      | T104      | 6500 |

- i) Name the Candidate keys in Table Faculty. 1
- ii) Which column is used to relate the two tables? 1
- c) With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii)
- i) To display TeacherID, Name of Teacher, Subject name for which the fee is above 3500. 2
- ii) To display CourseID, Subject along with the TeacherID for the teachers staying in Mumbai. 2
- iii) Select TeacherID, Name, PhoneNo, Fee From Faculty, course where Faculty.TeacherID = Course.TeacherID AND Subject like 'Int%'; 2