

Name : \_\_\_\_\_ Date : \_\_\_\_\_

**Test Paper : UBSTLDSv1.1**

**Time Limit : 60 min**

**FOR OFFICIAL USE**

Category	Question. Score	Score ( / Max)
Core Java	1 – 4	/
Data Structure	5 – 7	/
Security	8 – 9	/
Database	10 – 11	/
Web/UI	12 – 13	/
Appl Server	14	/
Design	15 – 16	
		/
	<b>Total:</b>	<b>/ 16</b>
	<b>Percentage Score:</b>	<b>%</b>
SDLC	Face-to-face Interview	
Appl Server	Face-to-face Interview	

1) Please see the following codes, give the order according to their quality (such as A>B>C>D) and state your reason(s):

A) `String s = "a" + "bbbbbbb" + "cccccccccc";`

B) `String s1 = "a", s2 = "bbbbbbb", s3 = "cccccccccc", s = s1 + s2 + s3;`

C) `String s = new StringBuffer("a").append("bbbbbbb").append("cccccccccc").toString();`

D) `String s = new StringBuffer(18).append("a").append("bbbbbbb").append("cccccccccc").toString();`

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2) In Java garbage collection, what are permanent generation, new generation and old generation?

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3) Please find the problem(s) in the following code and fix them.

```
public Boolean[] populateDataFlag(ResultSet rs) {
    try {
        List data = new ArrayList();
        while (rs.next()) {
            data.add(rs.getString("FLAG").equals("TRUE"));
        }
        return (Boolean[]) data.toArray(new Boolean[0]);
    } catch (Throwable t) {
        rs.close();
    }
    return null;
}
```

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4) Describe 2 new language features of Java 1.5

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5) What are the difference between **Set**, **List** and **Map**?

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6) What are the implementation differences between **HashMap**, **TreeMap** and **LinkedHashMap**?

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7) Two big collections A and B, the size of collection is about 10,000, please finish the following java function to subtract the repeated element from A. for example: A{1, 2, 3} – B{1, 3, 5} = C{2}

```
public static Collection subtract(final Collection a, final Collection b)
{
```

```
}
```

---

8) How to avoid SQL injection?

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9) How to securely send information between systems?

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10) Write a SQL to generate the result as "Output" with Table: CUSTOMER and CUST\_PLAN:

**Table: CUSTOMER**

CUST_ID	CUST_NAME
1	Thomas Robinson
2	Paggy Robert
3	Mandy Lam
4	Susanna Rockstone
5	Tony Zhao
6	Robert Lai

**Table: CUST\_PLAN**

CUST_ID	PLAN_CODE
1	A
5	A

**Output**

CUST_ID	CUST_NAME	PLAN_CODE
1	Thomas Robinson	A
2	Paggy Robert	
3	Mandy Lam	
4	Susanna Rockstone	
5	Tony Zhao	A
6	Robert Lai	

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11) Write a SQL to retrieve "DEPT\_CODE", "GRADE\_CODE" and number of staff, for department has more than 2 staff.

**Table: STAFF**

STAFF_ID	DEPT_CODE	GRADE_CODE
1	FO	AO
2	FO	AO
3	FO	DI
4	BO	AO
5	BO	AO

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12) JavaScript Question

See the following HTML code and finish JavaScript function 'validateName':

```
<div id='messageArea'></div>  
<input name='name' onblur='validateName()'>
```

Requirement:

Validate the 'name' field and only, show the error message "found illegal letter" in message area if the input letters are not a-z or A-Z.

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13) Struts populates the given form bean with request parameter values, do you know how to implement it? Please describe the basic progression.

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14) For IBM WebSphere, please describe what are the followings:

Cell:

Node:

Deployment Manager:

Admin Server:

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15) Give one example of where **singleton** pattern is used in an application, and explain why ?

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16) You were asked to design a car park system. You are given 2 computers, 1 at entrance, and 1 at exit. They are connected by a LAN. The entrance machine counts how many cars entering the car park, and the exit one counts how many cars leaving the car park.

Question: At any time, system needs to tell exactly how many free parking slots there are in the car park. How would you design the software system ? Where would you keep the number of "how many free parking slots"?