



NATIONAL INSTITUTE OF BUSINESS MANAGEMENT
Higher National Diploma in Computer Based Information Systems - 18.1- HNDCBIS -2-3-07
Higher National Diploma in Software Engineering - 18.1- HNDSE -2-3-07

Enterprise Application Development

Time allowed: Three hours

15th October 2018, 9AM-12Noon

INSTRUCTIONS TO CANDIDATES

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| <ul style="list-style-type: none">• This paper contains 5 questions.• All calculators are not allowed.• Answer ALL questions. |
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1.

- I. What is Remote Method Invocation? **(2 marks)**
- II. Briefly explain what is conversational state? **(3 marks)**
- III. What are the differences between stateless session bean and a stateful session bean? **(4 marks)**
- IV. Explain when to use different types of session beans in an EJB application. **(6 marks)**
- V. Briefly explain Peer to Peer and Publisher Subscriber messaging domains. **(5 marks)**

2.

- I. What is a Servlet? **(2 marks)**
- II. Briefly explain HttpServletRequest and HttpServletResponse objects. **(2 marks)**
- III. Explain how a web server handles dynamic requests and works with respect to request and response object creation. **(6 marks)**
- IV. What are the common tasks performed by a Servlet container? **(5 marks)**
- V. Write a sample Servlet code to print the input values from the given index.jsp page. **(5 marks)**

index.jsp

<pre><html> <head> <title>Index Page</title> </head> <body> <form action="DoctorRegistration"> Doctor Name: <input type="text" name="name" /> Specialization: <input type="text" name="specialization" /> </form> </body> </html></pre>
--

```
</form>
</body>
</html>
```

3.

- I. Briefly explain MVC architecture. **(3 marks)**
- II. Name four implicit objects you have used in JSP. **(2 marks)**
- III. What are scripting elements used in JSP? Explain with syntax. **(3 marks)**
- IV. Briefly explain the lifecycle of a JSP file. **(6 marks)**
- V. Write sample JSP code to enter the first name and last name. once submit button is clicked a new JSP page should be displayed with the details the user entered. **(6 marks)**

4.

- I. What is the role of Action class in Struts? **(2 marks)**
- II. List down different result types provided in Struts Action interface and explain when you can use each of them. **(5 marks)**
- III. What are the main advantages of using struts framework over JSP and Servlets? **(4 marks)**

Answer questions **IV, V** based on following struts form.

```
<s:form action="doctorRegistration">
    <s:textfield name="name" label="Doctor Name"></s:textfield>
    <s:textfield name="specialization" label="Specialization"></s:textfield>
    <s:textfield name="mobile" label="Contact Number"></s:textfield>
    <s:submit value="Submit"></s:submit>
</s:form>
```

- IV. Write DoctorRegistrationAction class for the given struts form to accept Doctor Name, Specialization and Contact Number. It should not be possible for the user to have an empty name and specialization. Validate the name and specialization using struts validation. **(6 marks)**
- V. Write a Struts.xml configuration for the given struts form. **(3 marks)**

5.

- I. What are the benefits of using ORM tools like Hibernate? **(4 marks)**
- II. Explain what a Configuration object is in hibernate by explaining the purpose of creating this object. **(2 marks)**
- III. Briefly explain the Hibernate architecture. **(2 marks)**

- IV. Refer the Doctor persistent class and Doctor_tbl table given below. Write a hibernate mapping xml (Doctor.hbm.xml) to map the Doctor persistent class to Doctor_tbl database table.

(4 marks)

Persistent Class

Doctor
Id: long name: String specialization: String

Database table

Doctor_tbl
ID: Integer (Primary Key) NAME: VARCHAR (80) SPECIALIZATION: VARCHAR (80)

- V. Refer the given Doctor persistent class and Doctor_tbl and write sample hibernate codes using **Hibernate Query Language** for questions a), b), c) and d)

Doctor Persistent class

```
Class Doctor
{
    Long id;
    String name;
    String specialization;
    String contactNo;
}
```

Doctor_tbl Database table

ID	NAME	SPECIALIZATION	CONTACTNO
1	Wasantha	Cardiologist	071-1234567
2	Bandara	Cosmetologist	076-1456789
3	Jayawardhana	Counselor	078-1345678

- Select all the records from Doctor_tbl table. **(2 marks)**
- Retrieve all cardiologists from Doctor_tbl table. **(2 marks)**
- Change the contact number of doctor Bandara to 072-1357924. **(2 marks)**
- Insert a new record to the table with proper data of your choice. **(2 marks)**