B4.3-R4 : OBJECT ORIENTED DATABASE MANAGEMENT SYSTEMS

NOTE :

1.	**Answer question 1 and any FOUR from questions 2 to 7.**
2.	**Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1. (a) Compare Inheritance and Composition in Object Oriented Concepts.
(b) How are friend functions different from member functions ?
(c) Discuss two objects that are shallow equal but not deep equal or explain why this is not possible.
(d) What is the role of Object Definition Language ?
(e) What are the drawbacks of using Document Type Definitions ?
(f) Compare simple and complex relationship.
(g) State the advantages of using OO programming.

(7×4)

2. (a) Give a valid XML document that conforms to below given XML Schema.

```
<?xml version="1.0"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" >
<xs:element name="Employee_Info" type="EmployeeInfoType" />
<xs:complexType name="EmployeeInfoType">
 <xs:sequence>
<xs:element ref="Employee" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:complexType>
<xs:element name="Employee" type="EmployeeType" />
<xs:complexType name="EmployeeType">
<xs:sequence >
<xs:element ref="Name" />
<xs:element ref="Department" />
<xs:element ref="Telephone" />
<xs:element ref="Email" />
</xs:sequence>
<xs:attribute name="Employee_Number" type="xs:int" use="required"/>
</xs:complexType>
<xs:element name="Name" type="xs:string" />
<xs:element name="Department" type="xs:string" />
<xs:element name="Telephone" type="xs:string" />
<xs:element name="Email" type="xs:string" />
</xs:schema>
```

(b) "Wrapper templates play an important role in query patterns for information integration" Discuss. Give example to explain the concept of capability based optimization.

(9+9)

3. (a) Compare and contrast ODBMS and ORDBMS.

(b) Explain, in detail, Booch Methodology for OO design.

(c) What is Software extensibility in terms of ORDBMS? Explain.

(6+6+6)

4. (a) What are different tags specified in an XML-Schema namespace. Give examples.

(b) How are exceptional attributes different from exceptional methods in O2?

(9+9)

5. (a) What is the difference between transient, persistent and detached objects?

(b) Justify the motivation for Nested relation and complex types with suitable examples.

(9+9)

6. (a) Explain the following terms:

(i) Nested Queries

(ii) Containment

(iii) RDBMS

(iv) View

(v) Application Programming Interface

(b) How is Specialization and Generation implemented in Object Relational Data Model?

(10+8)

7. (a) Discuss ORION database system in terms of data model support, architecture and specific features.

(b) Describe Object Exchange Model (OEM) for semi structure data representation. Explain its features with an example.

(10+8)

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