INSTITUTE OF COMPUTER SCIENCE

MET

UNIVERSITY QUESTION PAPERS (ICS)

EXAM PAPER MAY-2010

SEM-IV

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SEM-IV

SR.NO	SUBJECT	REMARK
1	JAVA PROGRAMMING	✓
2	OBJECT ORIENTED MODELING AND DESIGN USING UML	✓
3	NETWORK SECURITY	✓
4	ADVANCE DATABASE TECHNIQUES	✓
5	ELECTIVE I CRM	✗
6	SOFTWARE PROJECT MANAGEMENT	✓

SR.NO	LIST OF ELECTIVE - I
1	SERVICE ORIENTED ARCHITECTURE
2	EMBEDDED SYSTEM
3	IMAGE PROCESSING
4	BIO INFORMATICS
5	ARTIFICIAL INTELLIGENCE

N.B. : (1) Question No. 1 is compulsory.
     (2) Answer any four questions Question Nos. 2 to 7.
     (3) All questions carry equal marks.

1. (a) State the difference between Java application and Applet. Explain in brief the different stages of an Applet Life Cycle   10

   (b) Write a program showing three threads working simultaneously upon single object.   10

2. (a) Explain the OOPS concepts used in Java.   10

   (b) Explain the difference between static, class and local variables along with example.   10

3. (a) Explain the JDK, JVM and Bytecode.   10

   (b) Write a program to count the number of object created for class using static member method.   10

4. (a) Create the following GUI using swing.   10
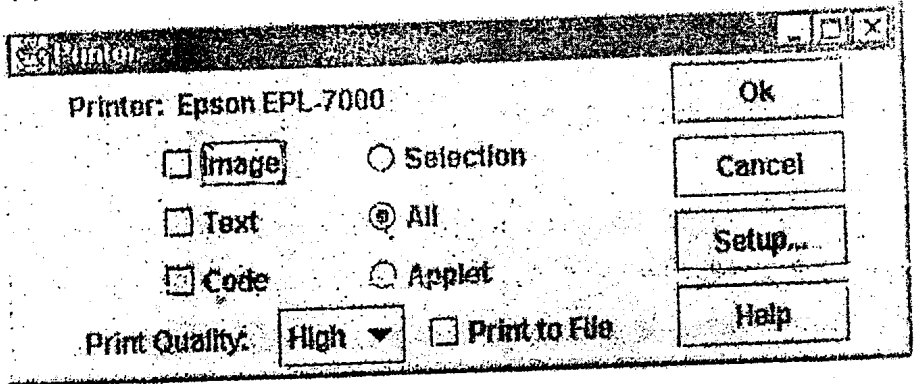
   (b) State the five Layouts in Layout Manager for Java AWT. Show the layouts displayed by each of these Layout.   10

5. (a) Write short notes on abstract classes, inner classes and wrapper classes in java.   10

   (b) Explain the role of Classes, interfaces and Packages in java.   10

6. (a) What is the use of synchronization in Java? Explain with example?   10

   (b) What is Thread? Explain in detail Thread life cycle?   10

7. (a) Describe Java program steps in order to get connectivity to database along with example.   10

   (b) Explain the different ResultSet constants and ResultSet types.   10

Con. 3295-10.   (REVISED COURSE)   JR-1165

(3 Hours)   [Total Marks : 100

N.B. (1) Question No. **1** is **compulsory**. Attempt any **four** from the remaining six.
  (2) **All** questions carry **equal** marks.
  (3) Assumptions made should be **clearly** stated.

1. (a) Create the class diagram for the IT company described below :—   10

  ABK requires a new point of sale and stock control system for their many stores throughout the Mumbai.

  A sales assistant will be able to process an order by entering product numbers and required quantities into the system. The system will display a description, price and available stock. In-stock products will normally be collected immediately by the customer from the store but may be selected for delivery to the customer's home address for which there will be a charge. If stock is not available the sales assistant will be able to create a backorder for the product from a regional warehouse. The products will then either be delivered direct from the regional warehouse to the customer's home address or to the store for collection by the customer. The system will allow products to be paid for by cash or credit card. Credit card transactions will be validated via an online card transaction system. The system will produce a receipt. Order details for in-stock products will be printed in the warehouse including the bin reference, quantity, product number and description. These will be collected by the sales assistant and given to the customer. The sales assistant will be able to make refunds, provided a valid receipt is produced. The sales assistant will also be able to check stock and pricing without creating an order and progress orders that have been created for delivery.

  The store manager will be able at any time to print a summary report of sales in the store for a given period, including assignment of sales to sales assistants in order to calculate weekly sales bonuses. The stock manager will be able to monitor stock levels and weekly run-rates in order to set minimum stock levels and requisition products which fall below the minimum stock levels or for which demand is anticipated.

  (b) Create sequence diagram for processing the order in the above mentioned problem   10
  statement.

2. (a) What are the benefits of reuse ? What the various forms of reuse in object oriented   10
  development. Explain.
  (b) What is importance of modeling ? Discuss how UML is a great tool for object oriented   10
  system development.

3. (a) Explain various extension mechanisms to be used in UML.   10
  (b) Draw a state chart diagram that tracks the various state of bread in the toaster. Include   10
  necessary triggering events, action and guard conditions.

4. (a) Explain logical architecture and hardware architecture model.   10
  (b) Draw sequence diagram to model the activity involved in taking cold drink from the   10
  dispenser.

5. (a) Differentiate between (any **two**) :—   10
      (i) Aggregation vs. Composition
      (ii) Architectural vs. Design Pattern
      (iii) « extend » vs. « include »
  (b) How can a flexibility of a class be achieved through aggregation ? Explain with example.   10

6. (a) Write a short note on the methodology given by Rambaugh for object oriented system   10
  development.
  (b) Explain top down approach for software system design with suitable example.   10

7. Write short note on following (any **four**) :—   20
    (a) Artifacts   (d) Join-Fork
    (b) Patterns   (e) Qualified Association.
    (c) Actor class

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JR-1156

(3 Hours)

[Total Marks : 100
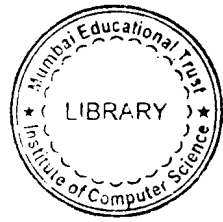
.B. (1) Question No. **1** is **compulsory**.
   (2) Attempt any **four** from the remaining.
   (3) **Figures** to **right** indicate **full** marks.
   (4) Illustrate **answers** with **sketches** wherever **necessary**.
   (5) Answers to **sub-questions** should be answered **together**.

(a) What is cryptography ? Distinguish between symmetric and asymmetric cryptography. **10**

(b) What are Certification Authorities ? How are they different from Key Distribution **10**
Center? Which of the two is preferable and why ?

(a) Explain Diffie-Hellman Key distribution algorithm. What is Man-in-the-Middle attack ? **10**
Explain with the example.

(b) What is Kerberos ? How does it work ? How is Kerberos V5 different from V4. **10**

(a) What is Certificate Revocation? What are the broad level differences between CRL, **10**
OCSP and SCVP ?

(b) What are the key principles of security ? Differentiate between Active attacks and **10**
Passive attack.

(a) Explain broad-level steps in DES. What is a DES round ? **10**

(b) Differentiate between SSL and SET. **10**

(a) Compare and contrast message digest algorithms MD4, MD5 and SHA. **10**

(b) What is Mutual Authentication ? What is Reflection Attack ? Suggest one method **10**
of fixing this.

. (a) What is Firewall ? Explain different types of Firewalls. **10**

(b) Explain RSA asymmetric cryptographic algorithm with the help of numerical example. **10**

7. Write short notes on any **four** of the following :— **20**

   (a) E-mail security
   (b) Message Digest
   (c) IDEA
   (d) Multiple KDC Domains
   (e) Biometrics
   (f) Intrusion.

Con. 3300-10.   (REVISED COURSE)   JR-1159

(3 Hours)   [Total Marks : 100

Note: Q.1 is compulsory. Attempt any 4 out of remaining six questions.

1.		Write Short on the following(Any Four): –	20
	(i)	Phantom Deadlock	
	(ii)	Data Minining	
	(iii)	Two Phase Commit	
	(iv)	Polyinstatiation	
	(v)	Snow flake schema.	
2.		Differentiate between following: –	20
	(i)	Synchronous vs Asynchronous replication	
	(ii)	RDBMS vs ORDBMS	
	(iii)	Data Warehouse Vs Operational Database	
	(iv)	MOLAP vs ROLAP.	
3.	(a)	Why recovery in a distributed DBMS more complicated than in a centralized system. Explain.	10
	(b)	Explain ETL process in data warehousing.	10
4.	(a)	What are multidimensional cubes? Explain how the slice and dice technique fits into this model.	10
	(b)	Explain the architecture of parallel database system.	10
5.	(a)	Explain top-down approach in respect to data mart and data warehouse	10
	(b)	Discuss deadlock detection in distributed database. Explain centralized, hierarchical and time out approaches.	10
6.	(a)	Why clustering is termed as unsupervised learning process? Explain	10
	(b)	What are the components of decision tree? Explain how the decision tree constructed.	10
7.	(a)	Explain Bell-LaPedula Model. What type of security is implemented by it?	10
	(b)	Describe any one of the options available to integrate KM with data warehousing.	10

P4 Exam.-March- 10-2-248

Con. 3375-10.

JR-1153

(3 Hours)

[Total Marks : 100]

N.B. : (1) Question No. **1** is **compulsory**.
   (2) Attempt any **four** questions out of the remaining **six** questions.
   (3) **Figures** to be **right** indicated marks.

1. (a) Describe how to use a probability / Impact matrix, risk factors and the Top Ten Risk   15
   Item Tracking approaches for performing qualitative risk analysis. How could you
   use each technique on project ?

   (b) Write a note on Administrative Closure.   5

2. (a) Discuss the changes in the job market for information technology workers. How   10
   does the job market and current state of economy affect human resources
   management ?

   (b) What are the main processes in project communication management ?   10

3. (a) Explain the four frames of organizations. How can they help project managers   10
   understand the organizational context for their projects ?

   (b) Explain the following schedule development tools and concept: Gantt charts,   10
   critical path method, PERT and critical chain scheduling.

4. (a) Explain importance of performance reporting. Also give different ways of   10
   performance reporting.

   (b) What is project implementation ? Explain different approaches for the project   10
   implementation.

5. (a) Explain some of the basic principles of cost management, such as profits, life cycle   10
   costs, tangible and intangible cost and benefits, direct and indirect costs reverses
   and so on.

   (b) Discuss in detail procurement management.   10

6. (a) List and explain five practices of exemplary leadership. Explain leadership styles   10
   in detail.

   (b) What are different types of contracts ? Explain in detail.   10

Write short notes on :–   20
   (a) Project management ethics
   (b) Critical chain scheduling
   (c) Stakeholders management
   (d) Information distribution.

CRM

(REVISED COURSE)   JR-3872

(3 Hours)   [Total Marks : 100

N.B. (1) Question <u>1</u> is <u>compulsory</u>

(2) Attempt any <u>four</u> from 2 to 7.

(3) Illustrate answers with sketches wherever required.

1. (a) What is eCRM? How does it differ from CRM .   [10]

    (b) What are the Caveats of CRM Implementation? Discuss pre-   [10]
         implementation, and Rollout and System Hand off.

2. (a) What is SFA? Why is it necessary in CRM?   [10]

    (b) What do you understand by pipeline management?   [10]

                                                                        [10]

3. (a) Explain the role of ASP ? What are the advantages and disadvantages   [10]
         of implementing ASP?

    (b) What is EMA? What are the components of EMA .   [10]

4. (a) What is opt-in and opt-out? What is cross selling and upselling?   [10]
         Illustrate.

5. (a) Which are the concepts, which should be considered when, Web   [10]
         Enabling a call center?
    (b) How do the traditional channels have impact on CRM? How does the   [10]
         emerging channel environment have impact on CRM?

6. (a) Write a note on business analytical and reporting tools of EMA.   [10]
    (b) What is Power User Beta test? Why is data import important?   [10]

7. (a) Write note on ACD , CTI and IVR .   [10]
    (b) What is Campaign Management? Give the flow diagram of a Campaign [10]
         which is created by marketing automation tool .