MET

INSTITUTE OF COMPUTER SCIENCE

UNIVERSITY QUESTION PAPERS (ICS)

EXAM PAPER MAY-2011

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	
*	CUSTOMER RELATIONSHIP	✓
*	EMBEDDED SYSTEM	✓
*	E-BUSINESS	✓
*	GEOGRPHIC INFORMATION	
*	ARTIFICIAL INTELLIGENCE	✓
6	SOFTWARE PROJECT MANAGEMENT	✓

MCA - Sem - IV - May - 2011.
Sub. Java - Programming
DATE: 27/05/2011.

P4–Exam.–May–11–237
Con. 2926–11.

CD–1464

(3 Hours) [Total Marks : 100

Note:

1) Question 1 is compulsory.
2) Answer any four Questions from Q 2 to Q 7.

Q-1 a) Explain why Java is platform independent and is important to the internet. 10
b) Explain Event delegation Model in java. Write a program to demonstrate it. 10

Q-2 a) Explain thread life cycle with neat diagram. Write a program to demonstrate inter thread communication. 10
b) Explain wrapper classes with suitable java program. 10

Q-3) a) Explain Dynamic method Dispatch with suitable java program. 10
b) Write short note on any <u>two</u> : 10
1)Inner classes
2) super keyword
3) static keyword

Q-4) a) Write a java program to create GUI by using any five controls of AWT. 10
b) Explain any five built-in packages of java also write steps to create a package. 10

Q-5 a) Write java Exception handling program to demonstrate any two java's unchecked Runtime exception subclasses. 10
b) Explain object Serialization and Deserialization with suitable example. 10

Q-6 a) Write Applet program to handle mouse events. 10
b) Explain the role of Driver Manager class with suitable java program. 10

Q-7) a) Write java program to demonstrate use of final keyword. 10
b) Write java program using objects as parameters to a function named Equal to display true if the two objects are equal else false if not. 10

MCA Sem-IV Object Oriented Modeling & Desi
Using UML

P4-Exam.-May-11-73

Con. 2973–11. **(REVISED COURSE)** **CD–1467**

(3 Hours) **[Total Marks : 100**

N.B
- **Question number 1 is compulsory. Attempt any four from the remaining six**
- **All questions carry equal marks**
- **Assumptions made should be clearly stated**

Q1. Create use case diagram for a medical clinic scenario and create a sequence diagram for taking doctor's appointment in the clinic. 20

Q2 Differentiate between the following (Any Four): 20
i. Inheritance vs Aggregation
ii. Extend vs Include
iii. Sequence vs Collaboration Diagram
iv. White Box vs Black Box Framework
v. Architectural vs Design Pattern

Q3 A. Explain the three tier logical architecture 10
B. Create a state chart diagram for dialing a telephone number. Use all or maximum UML notations for state chart diagram 10

Q4 A. Explain reuse of component? How is reusability achieved through Design Pattern 10
B. Explain bottom up approach for designing software system with suitable example. 10

Q5 A. What is UML.Explain the benefits of modeling for system development. 10
B. Explain noun phrase approach for developing class diagram.State the benefits and drawbacks for the same. 10

Q6 A. How can flexibility of class be achieved through cohesion and coupling 10
B. Differentiate between activity diagram and state diagram. Draw an activity diagram for a coffee wending machine 10

Q7 Write short note on the following: 20
i. Qualified Association
ii. Package
iii. Concurrency in Interaction Diagram
iv. CRC Cards

MCA 'Sem IV' May- 2011

Network security

P4-Exam.-May-11-71

Con. 2971–11. (REVISED COURSE) CD–1458

(3 Hours) [Total Marks : 100

Note: (1) Question No. 1 is compulsory.
(2) Answer any four from the remaining six questions.
(3) Sub questions should be answered together.
(3) All questions carry equal marks.

Q1 (a) What are the desirable security properties? (10)

(b) Name different methods used for authentication. Discuss any one. (10)

Q2 (a) Explain in details the DES algorithm with reference to its overview and a DES Round. (10)

(b) Name the methods used for encrypting large messages. Explain output feedback mode (OFM). (10)

Q3 (a) Explain with the help of a diagram the working of Kerberos version 4. (10)

(b). How are Kerberos ticket lifetimes in V5 different from V4? Distinguish between renewable and postdated tickets. (10)

Q4 (a) Discuss RSA with a suitable numerical example. (10)

(b)What is man in the middle attack? How does one avoid it? (10)

Q5 (a) Compare SHA1 and MD5. (10)

(b) Discuss MD4 in detail. (10)

Q6 (a) Discuss SSL or SET process (10)

(b)Explain firewalls. (10)

Q7 .Answer any two of the following :

(a) Multiple domain KDCs. (10)
(b) Electronic mail security. (10)
(c)) What are the pitfalls in mutual authentication? (10)
(d) Smart cards. (10)

MCA Sem-IV Advance Database Techniques

AGJ 1st half (o) 46

3|6|2011

Con. 3578-11. (REVISED COURSE) CD-1462

(3 Hours) [Total Marks : 100

ote: 1) Question No. 1 is compulsory.
2) Attempt any 4 questions from the remaining 6 questions.
3) All questions carry equal marks.

1. a) Explain the differences between any two 10
   i) Distributed and centralized database
   ii) OLTP and OLAP
   iii) Semi join and bloom join
   iv) Procedural and log-based capture

   b) i) Discuss the use of sorting versus hashing for data partitioning 5
   ii) What is snowflake schema? Is it better than Fact constellation schema? Prove with suitable examples 5

2. a) Explain two-phase commit with diagrams. What are its drawbacks and how can they be removed? 10

   b) i) What is the difference between supervised and unsupervised learning 5
   ii) Give definitions for following terms : Fragmentation, replication, concurrency, pipelining, security. 5

3. a) What is Association Rule mining? Explain the application of Association rule mining with an example. 10

   b) Explain Bell-La-Pedula model. What type of security is implemented by it? 10

4. a) Discuss pros and cons of various techniques for implementing asynchronous replication 10

   b) Explain distributed catalog management 10

5. a) What are the components of Decision tree? How are Decision trees constructed? 10

   b) Compare and contrast OODBMS and ORDBMS 10

6. a) How do warehousing, OLAP and Mining complement each other? Explain extraction, transformation and loading process in Data warehousing 10

   b) What is K-means clustering algorithm? Explain with example 10

7. Write short notes on any four of the following : 20
   i) Parallel Databases
   ii) Polyinstantiation
   iii) Metadata
   iv) Clustering
   v) Search Engines.

MCA Sem IV - May-2011

Embedded Systems

Con. 3974 & (a to c)-11. (REVISED COURSE) CD-1470 to1473

(3 Hours) [Total Marks : 100

N.B.
1. Question No.1 is compulsory.
2. Answer any four out of Questions No 2 to 7.
3. Numbers on the right indicate marks.

Q1 a) Draw the typical block diagram (for any one 6811,8051,80186) and describe its memory addressing scheme. (5)
b) Outline the steps to be followed while debugging embedded system for hardware and software problems. (5)
c) Write a simple diagnostic program to blink red LED when an error occurs in 80188 based development board. (5)
d) Give different types of memory used in a embedded system. (5)

Q2. a) What is interrupt latency? Give examples of hardware and software interrupt. Describe steps involved in servicing an interrupt. (10)
b) Describe NAND and NOR flash memory types and compare them. Name the file systems used to store information in flash. What are the function calls provided by the flash memory driver? (10)

Q3. a) What is a hard real time OS and soft real time OS? Give five examples of hard and soft types of real time applications. (10)
b) Describe the architecture of Win CE OR Embedded Linux OS. (10)

Q4. a) Describe a timer driver and how multiple software timers are possible. (10)
b) Using hardware timer interrupt, write a diagnostic program to blink red LED in a 80188 based development board. (10)

Q5. a) What is a Board Support Package (BSP)? Give ADEOS or WinCE example. (10)
b) How a startup routine prepares the board for running a program? In 80188, which segmentation registers will get initialized? (10)

Q6. a) Describe the scheduler in an embedded operating system like ADEOS. Give the scheduling points. (10)
b) What is a priority inversion? How it can be prevented? What is a watchdog timer? (10)

Q7. Write short notes on any FOUR of the following : (4 x 5 = 20)
a) UART b) USB
c) SPI & I2C d) JTAG
e) ARM 7 microprocessor architecture

MCA (Sem IV) May-2014

CRM.

Con. 3974(a) -11. 2 CD-1471

(3 Hours) [Total Marks : 100

Note:

1. Question **No. 1** is compulsory
2. Attempt **any four** questions from the remaining
3. All questions carry **equal marks**

Q1	A. Explain briefly the CRM technology components	10
	B. What is the purpose of customer retention strategy	10
Q2	A. "CRM and eCRM are really not separate?" comment it	10
	B. What is EMA explain promotions and events of EMA	10
Q3.	A. What is Web Enabling Call Center. Is it necessary for Customers?	10
	B. As a chief head of marketing of an apparel industry, give your plans for implementing EMA for a) promotion activities b) loyalty and retention d) event management	10
Q4.	A. Define Goals, Strategies, Plans , Objectives and Tactics	10
	B. what do you mean by IVR	10
Q5.	A. Explain emerging channel trends that impact CRM	10
	B. "what is power user beta test? Why is data import important ?	10
Q6.	C. What do you understand by the ASP and explain their roles and functions with examples	10
	D. Explain – a) Opt-in opt-out b)solicited y/s unsolicited mail c) kick-off meeting d) Cross selling and up selling	10
Q7.	Write short note on : A. customer life cycle B. campaign management C. CRM implementation D. pipeline management	10

Q1.

Q2.

Q4.

Q5.

Q6.

Q7.

MCA 'Sem IV' May-2011

Artificial Intelligence

Con. 3974(b) -11. 3 CD-1472

(3 Hours) [Total Marks : 100

N.B. (1) Question No.1 is compulsory.
(2) Answer any four from the remaining questions.

Q1. a) Explain A* Search Algorithm 10

b) Explain Bayesian network. 10

Q2. a) What is artificial intelligence? Explain the different models of Intelligence. 10

b) Write algorithm for Steepest Ascent Hill Climbing and explain drawbacks of it 10

Q3. a) Consider following facts : 10

A. Steve likes easy courses
B. Science courses are hard
C. All the courses in Basket-Weaving department are easy
D. BK 301 is basket weaving course

Convert each in Clausal Normal Form and obtain answer for "What course would Steve like ?" by resolution.

b) What do you mean by "Combinotorial Explosion" wrt Travelling Salesman Problem. How it can avoided. Explain importance of Heuristics 10

Q4. a) Explain K-armed Bandit Problem. 10

b) State and Explain the "Minimal Deception problem" in he context of GA 10

Q5. a) Define and explain their use: Rules and principles in the context of natural and fuzzy systems 10

b) Explain knowledge Data Discovery process in detail. 10

Q6. a) Write task domains of AI and state example for each. Categorize each by Mundane, Formal & Expert task domains 10

b) What are production systems? Explain production system characteristics. 10

Q7. Write a short note on : 20

A. Symbols Vs Numbers
B. Schema processing
C. Forward Vs backward reasoning
D. Rules Vs Principles

[TURN OVER

MCA Sem IV May-2011

E-Business

Con. 3974(c) -11. 4 CD-1473

(3 Hours) [Total Marks : 100

N.B. (1) question no:-1 is compulsory.

(2) Attempt any four questions from the remaining six questions.

(3) Figures to the right indicate marks.

(4) Illustrate answers with neat sketches wherever required.

Q. 1 (a) What is E-Business? Explain various factors affecting E-Business success. 10

(b) What is EDI? Explain various EDI standards in detail. 10

Q.2 (a) Explain the elements of E-Business Plan in detail. What are the various legal forms of organizations 10

(b) Describe the advantages and disadvantages associated with the log file analysis and page tagging. 10

Q. 3 (a) Explain various legal issues involved in operating E-Business. 10

(b) Discuss about Electronic Payment System? Explain various Electronic Payment Methods in detail. 10

Q. 4 (a) What is a Brand? How do you build a brand? 10

(b) What is Cryptography? Explain Symmetric and Asymmetric key cryptosystems in detail. 10

Q. 5 (a) List and explain various steps to create an E-Business website. 10

(b) What is testing? How do you test a Website? Explain load testing and stress testing in detail. 10

Q.6 (a) What is Computer Ethics? Discuss the nature of Computer Ethics in detail. 10

(b) What are various security issues in E-Business? List and explain various network and website security risks in detail. 10

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

(1) E-Business Value Chains

(2) Data Mining

(3) Banner ads and Opt-in email advertising

(4) Intrusion Detection Systems

(5) Internet Threats to Children

MCA (Sem-IV) 25 MAY 2011

Sub:- Software Project Management

P4-Exam.-May-11-70

Con. 2970–11.

CD–1455

(3 Hours) [Total Marks : 100

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

1. a) An IPL Cricket ticket booking website. You are involved to design the website. You consider this as a project answer the following questions:- 20

(a) Conduct a feasibility study for the project.

(b) Define the scope of the project.

(c) If you are a team leader what problems are you expecting to face?

(d) What are the essential features required for IPL Cricket ticket booking website?

(e) What do want to expect from your team members?

2. a) What is Project Management? Describe the project management framework providing example of stakeholders, knowledge areas. Tolls and techniques, and project success factors. 10

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

3. a) What do you mean by Project Metrics? Give example of any one project metrics to measure cost and schedule. 10

b) What are the different ways to close out a project? Explain each of them briefly. 10

4. a) Describe Risk Management Process. Explain RMMM plan in detail. 10

b) What is the nature of change? How the change management does effects a system? 10

5. a) How do you distinguish between Monitoring and Controlling? 10

b) List and explain five practices of exemplary leadership. Explain leadership styles in detail. 10

6. a) Explain the make – or buy decision process and describe how to perform the financial calculation involved in the simple lease – or – buy. What are the main types of contracts if you deicide to outsource? What are the advantages and disadvantages of each? 15

b) Explain Administrative closure. 5

7. a) Write short note on ; 20
(a) Matrix organization
(b) Project estimation
(c) Earned Value Analysis
(d) Payback period.