MCA (SEM-IV)

JAVA PROGRAMMING

(MAY- 2018)

Q.P. Code: 40313

Duration: 3 hours **[Total Marks :100]**

N.B (1) Question **No.1** is **compulsory.**
(2) Answer any **four** questions from Question Nos. **2 to 7.**
(3) Figures to the right indicate full marks.

1. (a) Explain String Method in java. Write a java program to sort an array of strings in ascending alphabetical order. **(10)**
   (b) Write a note on JDK, JRE, JVM. **(10)**

2. (a) Explain how exception handling is done in java. Write a program to demonstrate use of throw keyword. **(10)**
   (b) Explain event delegation model in detail. **(10)**

3. (a) What is method overloading in java? Explain with an example. **(10)**
   (b) Explain why java doesn't support multiple inheritance. Write a program to demonstrate use of interface. **(10)**

4. (a) Write a program to demonstrate static variable & static function. **(10)**
   (b) What is Package in java? Explain package with access modifier in java. **(10)**

5. (a) Explain applet life cycle with suitable example. **(10)**
   (b) Write a short note on wrapper classes in java. **(10)**

6. (a) Write a program to demonstrate use of super keyword. **(10)**
   (b) What are different types of drivers in JDBC? What does Class.forName() method do? **(10)**

7. (a) Explain with suitable diagram Thread life cycle in java. Write a program to demonstrate thread priorities. **(10)**
   (b) What is serialization and deserialization of objects? Explain with example. **(10)**

MCA (SEM-IV)

OBJECT ORIENTED MODELING AND DESIGN USING UML

(MAY- 2018)

QP CODE: 35845

[Total Marks: 100]

N.B.: 1) Question No.1 is **compulsory.**
2) Attempt any **four** from the remaining **six** questions.

1. (a) Draw a class diagram for following information. Make use of qualified association. Explain any assumptions or design decisions that you make. (10)
The UK banking system consists of a number of banks. Each bank has a number of branches, each identified by a unique sort code. Banks maintain accounts, each with a unique account number. In addition, each account is held at a particular branch of the bank. Some accounts allow cheques to be written, where each cheque is identified with a cheque number.

   (b) What is the conceptual difference between the "include" and the "extend" relationship? Give an example of each relationship (10)

2. (a) Explain following concepts as applied to the dynamic modeling: - (10)
   a) Abstract class
   b) Multiple inheritance
   c) Protocol

   (b) Discuss how cohesion and coupling affect the flexibility of static modeling of a system. (10)

3. (a) Discuss with example implementation architecture. (10)

   (b) Explain the concept of dynamic modeling with scenarios and class cards. (10)

4. (a) Draw a use case diagram for employee payroll system. List all the assumptions taken into consideration for the system scope. Write use case description. (10)

   (b) What is importance of modeling? Explain Booch methodology? (10)

5. (a) Explain interaction diagrams with suitable example. (10)

   (b) What criteria one can employ to partition classes (10)

6. (a) Explain state chart diagram with example of "life cycle of a thread in java" (10)

   (b) Explain the concept of time constraints and duration. (10)

7. Write Short Notes on ***any four***: - (20)
   (a) A 'package' in UML
   (b) Component diagram in UML
   (c) Class normalization for cohesion
   (d) A 'stereotype' in UML
   (e) State v/s Event

MCA (SEM-IV)
NETWORK SECURITY
(MAY- 2018)

Q.P. Code :02179

[Time: Three Hours] **[Marks:100]**

Please check whether you have got the right question paper.

N.B: 1. Questions No. 1 is compulsory.
2. Answer any four from remaining six questions.

Q.1	a)	What is network security? Explain principles of network security.	**10**
	b)	Explain in details DES algorithm.	**10**
Q.2	a)	What is cryptography? Distinguish between symmetric and asymmetric cryptography.	**10**
	b)	Differentiate between DES & IDEA.	**10**
Q.3	a)	Explain Diffie – Hellman key distribution algorithm. What is Man – in- the – Middle attack?	**10**
	b)	What is the difference between a private key and public key? Given two prime numbers p = 19 and q = 29, find out N, E, D in an RSA encryption process.	**10**
Q.4	a)	Explain MD2 checksum calculation in details.	**10**
	b)	Compare MD5 and SHA – 1 algorithms.	**10**
Q.5	a)	What is the reflection attack in mutual authentication? How can it be prevented?	**10**
	b)	Explain KDC. How does key distribution works with multiple KDC domains?	**10**
Q.6	a)	Explain SET in details.	**10**
	b)	Differentiate between Kerberos V4 and V5.	**10**

Q.7 Write short notes on **(any four)** **20**

a) Biometric devices
b) Cross – certification
c) Firewall
d) PEM
e) Intrusion detection system.

MCA (SEM-IV)

ADVANCE DATABASE TECHNIQUES

(MAY- 2018)

Q.P. Code: 34500

Total Marks: 100

Duration: 3 hrs

Note: 1) Question No. 1 is **compulsory**

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

Q 1. Write short note on the following (attempt any **Four**) 20

A. KDD process
B. Distributed catalog management
C. Search engines
D. Neural networks
E. OODBMS

Q 2. a) What are multidimensional cubes? Explain how the slice and dice operations are performed. 10

b) What is apriori property? Describe an algorithm for finding frequent item sets. Explain applications of data mining in various sectors. 10

Q 3. a) Discuss how the scanning, sorting and join operations can be parallelized using data partition technique 10

b) Explain Bell-LaPedula Model. 10

Q 4. a) Discuss Deadlock detection in distributed database. Explain centralized, hierarchical, and time out approach 10

b) Explain the relationship of data warehouse with ERP and CRM 10

Q 5. a) Explain ETL process in data warehousing. 10

b) Explain the architecture of parallel database. 10

Q 6. a) Explain why recovery in a distributed DBMS is more complicated than in centralized system. 10

b) What is K-mean clustering algorithm? Explain with an example. 10

Q 7. Differentiate between the following: 20

A. Synchronous vs Asynchronous replication
B. Semi Joins vs Bloom Joins
C. OODBMS vs ORDBMS
D. OLAP vs OLTP

-----X-----

MCA (SEM-IV)

ELECTIVE - I

CUSTOMER RELATIONSHIP MANAGEMENT

(MAY- 2018)

Q.P. Code :31625

[Time: Three Hours] **[Marks:100]**

Please check whether you have got the right question paper.

N.B:
1. Question.No.1 is compulsory.
2. Attempt any four from remaining six
3. All question carry equal 20 marks.

Q.1
a) What is customer life cycle? What is CLV? Explain onyx view of business for CRM **10**
b) What are the components of EMA? Explain them in brief **10**

Q.2
a) What are the Caveats of CRM implementation? Discuss pre implementation and rollout and system hand off. **10**
b) Explain in details various CRM technology components **10**

Q.3
a) Discuss the various issue involved in designing an effective marketing campaign for an e-commerce portal. **10**
b) Explain opportunity management. What is lead management **10**

Q.4
a) How does effective sales force Automation tool help in mainting better relations with customer **10**
b) Explain the advantages and disadvantages of implementing Application service provider **10**

Q.5
a) Which are the concepts which should be considered when web enabling call center is used **10**
b) Explain the technological aspect of sales Force automation in making the good relationship with customer. **10**

Q.6
a) What is IVR? What is inbound IVR and outbound IVR? **10**
b) Discuss the relevance of the kick – off meeting in the implementation phase of CRM tool in the organization. **10**

Q.7 Write short note on following **(any four)** **20**
a) CRM and e-CRM
b) Automatic call distribution
c) Power user Beta Test
d) G-SPOT of CRM
e) Impact of CRM on marketing channel
f) Response Management in EMA

****

MCA (SEM-IV)

SOFTWARE PROJECT MANAGEMENT

(MAY- 2018)

Q.P. Code : 33941

[Time: Three Hours] **[Marks: 100]**

Please check whether you have got the right question paper.

N.B: 1. Question.No.1 is compulsory.
2. Attempt any four questions from remaining six questions.

Q.1 a. Explain Project Risk Management & its planning process. **10**
b. What is project management & illustrate the framework to explain project management? **10**

Q.2 a. Explain the importance of planning purchase and acquisition for project procurement management. **10**
b. Explain performance reporting and different ways of it. **10**

Q.3 a. Explain the three important factors taken into consideration while acquiring the project team. **10**
b. What are different types of contract? Explain in detail. **10**

Q.4 a. What are multicultural projects? Explain the challenges of International Projects? **10**
b. What is cost estimating? Explain the types of cost estimate. **10**

Q.5 a. Explain Project life cycle. **10**
b. What are Conflicts? Explain different type of conflicts **10**

Q.6 a. Explain Leadership. Also explain leadership style with suitable example. **10**
b. Explain the seven basic tools of quality. **10**

Q.7 Write short notes on following: (Any 4) **20**
a. Stakeholder Management
b. Importance of Ethics in Project Management
c. Administrative Closure
d. Project Audit
e. GANTT chart

****

MCA (SEM-IV)

ELECTIVE - I

EMBEDDED SYSTEMS

(MAY- 2018)

Q.P. Code :31054

[Time: Three Hours] **[Marks:100]**

Please check whether you have got the right question paper.

N.B:
1. Question.No.1 is compulsory.
2. Attempt any four form the remaining.
3. All questions carry equal marks.
4. Answer to sub questions should be answered together.

Q.1	a)	Explain the architecture of 8051 with diagram.	10
	b)	Explain in detail the types of memory in embedded system.	10
Q.2	a)	What is a real time system? Explain hard and soft real time systems.	10
	b)	What is board support package (BSP)? Give examples of BSP.	10
Q.3	a)	Describe the architecture of Win CE or Embedded Linux OS.	10
	b)	Write a program for serial communication to interconnect two PC's through null modem cables.	10
Q.4	a)	What is interrupt latency? Describe an ISR and its critical section.	10
	b)	Explain in detail the architecture of Kernel.	10
Q.5	a)	Describe the architecture of IEEE 13494 fire wire with diagram.	10
	b)	Explain the difference between CISC and RISC.	10
Q.6	a)	Describe the architecture of Embedded NT.	10
	b)	Describe the mechanism of Washing Machine in detail.	10

Q.7 Write short note on **(any four)** 20

a) Watchdog timer
b) Symbian OS
c) JTAG
d) USB
e) UART

****

MCA (SEM-IV)

ELECTIVE - I

GEOGRAPHIC INFORMATION SYSTEM

(MAY- 2018)

Q.P. Code: 39947

[Total Marks : 100

(3 Hours)

N.B. : 1) Question No.1 is **compulsory.**
2) Attempt any **four** from the remaining **six** questions.

1. (a) What is GIS? Explain significance of GIS? Explain various application areas where GIS can be used. **(10)**
   (b) What is Raster Data Model? Explain its advantages and disadvantages. **(10)**

2. (a) What are the different approaches to representing the real world? **(10)**
   (b) Explain the concept of Georelational model and object model **(10)**

3. (a) Explain the difference between the coverage model and the geodatabase data model in storing a routes linear measure system with and example **(10)**
   (b) Explain methods to represent geographic data. **(10)**

4. (a) What is geocoding? Discuss the process of geocoding using a suitable example. **(10)**
   (b) What are Errors? Explain entity errors and attribute errors. **(10)**

5. (a) Explain what is projection? Discuss the various methods of map projections. **(10)**
   (b) What is pattern analysis? Describe Nearest Neighbor Analysis. **(10)**

6. (a) Discuss the relationship between GIS and location based services (LBS)? Explain the flow of information in LBS. **(10)**
   (b) Explain the geographic coordinate system and clarify the importance of datum in GIS. **(10)**

7. Write Short Notes on ***any four*** :- **(20)**
   a) Components of GIS
   b) Dynamic Segmentation
   c) Spatial data query
   d) Data classification and feature coding
   e) GIS Software

MCA (SEM-IV)
ELECTIVE - I
ARTIFICIAL INTELLIGENCE
(MAY- 2018)

Q. P. Code: 40063

Time: 3 HOURS **TOTAL MARKS: 100**

N.B: (1) Q.1 is compulsory.
(2) Answer any four questions from Q2 to Q7
(3) Figures to the right indicate marks.
(4) Assume any additional information, but justify the same

Q1. a) What is artificial intelligence? Explain different models of intelligence. 10
b) Explain different approaches to knowledge representation 10

Q2. a) Write down the steps for generating fuzzy rules with product space clustering. 10
b) Define and Compare Trees and Graphs with proper example. 10

Q3. a) Explain natural language processing with an example. 10
b) Explain K armed bandit problem. 10

Q4. a) With a Neat diagram explain Knowledge Data Discovery Process. 10
b) Explain A* and Hill Climbing Algorithm. 10

Q5. a) With an example explain concept of IS-A hierarchy. 10
b) Define and Compare Symbol and Numbers 10

Q6. (a) Explain Bayesian network with proper diagram. 10
(b) Explain resolution in predicate logic. 10

Q7. Write short notes on any **four:** 20
a) Different Models of reasoning
b) crossover and mutation over schemata
c) Application of Artificial Intelligence
d) Semantic Network
e) Comparison between Rules and principles

*** ALL THE BEST***

MCA (SEM-IV)

ELECTIVE - I

E-BUSINESS

(MAY- 2018)

Q.P. Code :31055

[Time: Three Hours] **[Marks:100]**

Please check whether you have got the right question paper.

N.B: 1. Question No. 1 is compulsory.
2. Attempt any four from the remaining.
3. Illustrate answers with neat sketches wherever required.
4. Answers to sub questions should be answered together

Q.1	a)	List and explain various steps to create an E-Business website.	10
	b)	Explain various E-Business models in detail.	10
Q.2	a)	Explain the factors affecting E-business for the success of E-business.	10
	b)	What do you mean by Entrepreneurial process? Explain with the help of a process diagram.	10
Q.3	a)	Explain various factors affecting E-business success in detail.	10
	b)	What is EDI? Explain Business implication of EDI?	10
Q.4	a)	Explain various ways of E-Business advertising.	10
	b)	Explain in detail about ERP and CRM systems.	10
Q.5	a)	What is cryptography? Explain symmetric and asymmetric key cryptosystems in detail.	10
	b)	What do you mean by Enterprise applications? Discuss Enterprise applications.	10
Q.6	a)	What are various security issues in E-business? List and explain various network and website security risks in detail.	10
	b)	What is computer ethics? Discuss the nature of computer ethics in detail.	10
Q.7		Write short notes on **(any four):-**	20

a) Internet Threats to children
b) IT in decision making
c) M-commerce
d) Data Mining
e) DNS

****