MCA (SEM - IV)
Java Programming
(Paper – I)
MAY: - 2016

QP Code : 26608

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

N.B. 1) **Question No.1 is Compulsory**
2) Answer any **4** questions from **question no. 2 to 7**
3) All questions carry **equal** marks

1) (a) State the difference between Java Applet and Application. Explain the difference phases of an Applet life cycle. **10**
(b) Write a program showing the working of three threads upon a single object. **10**

2) (a) What is the difference between C, C++ and Java.Explain JDK, JVM and Bytecode. **10**
(b) Explain static class member. Write a program to count the number of objects created for a class using Static class variable. **10**

3) (a) What is a layout? Show the various types of Layout given by the Layout Manager in Java. **10**
(b) Write a program to display a Calculator with basic functionalities like addition, subtraction, multiplication and division. **10**

4) (a) Write the steps in order to get connectivity of a Java Program to a Database along with examples. **10**
(b) Write a User-defined Exception – to raise exception for the Account Class if balance amount is less than Rs 1000. **10**

5) (a) Write a program to show default and parameterized constructor. **10**
(b) What is a package? Write a program to show how a class created in one package can be used by a class in a different package. **10**

6) (a) Write a program to find the sum of the series $1 + x^2 + x^3 + x^4$..... **10**
(b) Write a program to show inheritance in Java. What is the difference between function overloading and function overriding? **10**

7) Write short notes on any four **20**
(a) Object Serialization and de-serialization
(b) Thread Synchronization
(c) Byte Stream and Character Streams
(d) Constructor
(e) Garbage Collection in Java

MCA (SEM - IV)
Object Oriented Modeling and Design Using UML
(Paper – II) MAY: - 2016

QP Code : 26614

Note: **[Total Marks: 100]**

1. Question 1 is compulsory.
2. Attempt any four questions from the remaining six questions.

1	a)	Draw a use case diagram for a college.The college offers different courses in academic year. College conducts CET to give admission to different courses. Student can apply for various courses after getting CET score. With application form student have to submit required documents to registrar. Registrar will verify the documents and will allow student to take admission in the college. After document verification student can pay annual fees to clerk. Clerk will generate receipt and id card of the student.	10
	b)	Draw a Class diagram for above case study.	10
2	a)	Explain top down approach for software system design with suitable example	10
	b)	Write a short note on Reuse of patterns: Architectural pattern and Design pattern	10
3	a)	Explain Elements of Activity Diagram – Action state, Activity state, Object node, Control and Object flow, Transition (Fork, Merge, Join)	10
	b)	Explain Noun phrase approach for identifying classes.	10
4	a)	Write a short note on Cohesion, Coupling and Forms of coupling	10
	b)	What is composite state and parallel state? Explain with example.	10
5	a)	Draw state diagram for fully automatic washing machine where machine can restore history state.	10
	b)	Explain Process architecture. What are process and threads and their notations in UML	10
6	a)	Write a short note on Relationships among classes: Associations, Generalizations, Aggregation	10
	b)	Explain Sequence diagram with suitable example.	10
7		Write short notes on Following (Any Four) a) <<extend>> and <<uses>> b) Swimlanes c) Ternary and Reflexive Association d) History state e) Qualified Association	20

MCA (SEM - IV)
Network Security
(Paper – III)
MAY: - 2016

QP Code : 26610

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

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

2. Answer **any FOUR** from the remaining SIX questions

3. Figures to the right indicate full marks

Q1a
Define Network Security. What are the mechanisms provided by Network Security? 10

b Discuss ECB in details 10

Q2a

What are the advantages of CAs over KDCs? 10
b What is DES round? How is IDEA different from DES? 10

Q3a

What is Kerberos? How is Kerberos V5 different from V4? 10
What do you mean by Hash function? Compare SHA and MD5. 10

Q4a
Discuss the IPSec mechanism used to secure the data transfer. 10
b What is cryptography? Explain various types of cryptography.
Distinguish between Symmetric and Asymmetric key. 10

Q5a
Differentiate between MD4 and MD5 algorithms 10
b What is man in the middle attack? Alice and Bob establish a secret key using Diffie Hellman Key exchange using g=7; and n=13.
Alice takes x as 3 and Bob takes Y as 9. Tom an intruder selects x as 8 and y as 6. 10
Show the working of the man in the middle attack.

Q6a
Explain how security of a message is achieved using the SSL. 10
b What are firewalls? Explain different types of firewalls 10

Q7 Answer any four: 20
a) smart card
b) Biometric authentication
c)Intrusion Detection
d)Ticket lifetimes
e) Digital Signature.

MCA (SEM - IV)
Advance Database Techniques
(Paper – IV) MAY: - 2016

QP Code : 26616

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

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 datawarehousing. 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 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

MCA (SEM - IV)
Elective - I : Customer Relationship Management
(Paper – V) MAY: - 2016

QP Code : 26625

[Total Marks : 100

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

1. (a) Write a case study on use of CRM tools in Shopping Center and its impact on deciding strategies. (10)
   (b) How CRM is useful in various level of organization to implement various strategies. (10)

2. (a) What is SFA? Why is it necessary in CRM? (10)
   (b) With the help of suitable example explain how web enabling call center helps in business to serve customer (10)

3. (a) Explain the role of ASP? What are the advantages and disadvantages of implementing ASP? (10)
   (b) Differentiate between CRM and e-CRM (10)

4. (a) What is campaign Management? Give the flow diagram of a Campaign which is created by marketing automation tool. (10)
   (b) Explain in detail opt in, opt out, cross selling and up selling. (10)

5. (a) Define G-Spot. How does it help in implementing a better CRM process? (10)
   (b) What is power user beta test? Explain its impact on CRM. (10)

6. (a) Explain the customer life cycle in details and-it's relevance (10)
   (b) Explain the various factors to be considered while implementing CRM solutions in call center service. (10)

7. Write Short Notes on ***any four*** :- (20)
   a) IVR system
   b) Automatic Call Distribution
   c) EMA components
   d) Computer Technology Integration
   e) Components of e-CRM

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MCA (SEM - IV)
Software Project Management
(Paper – VI) MAY: - 2016

QP Code : 26604

Marks: 100

N.B. (1) Question 1 is compulsory
(2) Attempt any four from question 2 to 7
(3) Illustrate answers with sketches wherever required.

Q.1.	(a)	Briefly explain differences between functional, matrix and project organizations	[10]
	(b)	What is project management? Explain in brief the Project Management Framework, Knowledge Areas of Project Management, and Stakeholders	[10]
Q.2.	(a)	List the different categories of risk and explain the risk register	[10]
	(b)	What is involved in the process of requesting seller responses? How do organizations decide whom to send RFPs or RFQs?	[10]
Q.3.	(a)	Define assimilation and its importance to understanding how people/organization deal with change.	[10]
	(b)	Explain the four frames of organizations. Explain with suitable example how they can help the PM understand the organization context for their project	[10]
Q4	(a)	List and explain the different types of contracts for procurement.	[10]
	(b)	What is organizational culture? What type of culture promotes a strong project environment?	[10]
Q5	(a)	What is the role of Project Manager? What are the suggested skills for project managers?	[10]
	(b)	Discuss the importance of top management commitment and the development of standards for a successful project management	[10]
Q6	(a)	Define ethics. Why is there need to have ethics in projects? How does ethics affect leadership?	[10]
	(b)	Describe the three approaches to implementing a information system.	[10]
Q7		Attempt any four	[20]
	(a)	Explain Decision trees for quantifying the risk.	
	(b)	What is a change sponsor? What is the difference between initiating sponsor and a sustaining sponsor?	
	(c)	What are the main types of contracts if you decide to outsource?	
	(d)	Describe Earned Value, BWCP, ACWP, BCWS	
	(e)	Describe the various scenario of project closure	
	(f)	Describe the risk register in detail.	

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