



Narasaraopeta Engineering College (Autonomous)
Kotappakonda Road, Yellamanda (P.O), Narasaraopet- 522601, Guntur District, AP.

Subject Code: R16MCA301

MCA - III Semester Regular Examinations, Nov – 2017.
SOFTWARE ENGINEERING

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B
All questions carry equal marks of 12.

PART-A

1. (a) List out various process assessment standards
- (b) Draw a diagram for requirements elicitation and analysis process
- (c) List out the characteristics of a well-formed design class.
- (d) Define object and object class
- (e) Differentiate between alpha testing and beta testing.
- (f) List out various size-oriented metrics.

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) Categorize software myths and explain them. 6
- (b) Describe the Layered technology for software engineering in detail with diagram 6
3. (a) Explain how a prototype model is used to develop a product 8
- (b) List out checks and validations of requirements. 4
4. (a) List out various design concepts in detail 6
- (b) Draw Architectural Context diagram for a SafeHome Security function and explain its Archetypes, Refinement and Instantiations 6
5. Illustrate various design models and explain them with diagrams 12
6. (a) List out various System testing methods. 8
- (b) Give the metrics for the requirements model. 4
7. (a) Write the steps for risk projection and draw risk impact table. Write the formula and develop a risk table and its management 8
- (b) Write short notes on six sigma standard 4

Subject Code: R16MCA302

MCA - III Semester Regular Examinations, Nov – 2017.

OBJECT ORIENTED ANALYSIS AND DESIGN USING UML

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) What is an Encapsulation?
- (b) What is a Package?
- (c) Explain the terms in Collaboration Diagram
- (d) Define Swim lines
- (e) Differences between Forward and Reverse Engineering
- (f) What is modelling Adaptive Systems?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) What is model? What the essential features are of object oriented paradigm? Explain briefly.
- (b) Write about the Phases in the Software Development Life Cycle.
3. (a) What are the common properties and uses of class diagrams
- (b) Which UML diagrams gives a static view and which gives a dynamic view of a system.
4. (a) What are the common properties and uses of interaction diagram
- (b) Draw a sequence diagram that specifies the flow of control involved in initiating a simple, Two-party phone call. Explain?
5. (a) Draw a use case diagram that depicts the context of credit card validation system. Explain Briefly.
- (b) How are forking and joining used in activity diagrams? Give example.
6. (a) Define the terms Event, Signal, State machine, Process and Thread with suitable Examples.
- (b) Explain briefly about state chart diagrams with examples.
7. (a) What are common modelling techniques in Component diagram?
- (b) Draw the Component and Deployment Diagrams for Library Management System.



Subject Code: R16MCA303

MCA - III Semester Regular Examinations, Nov – 2017.

DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. (a) Give the two major phases of performance evaluation
(b) Write the Control abstraction for Divide-and conquer.
(c) What are the steps required to develop a greedy algorithm?
(d) Give the time complexity and space complexity of traveling salesperson problem.
(e) What are the requirements that are needed for performing Backtracking?
(f) What is a decision problem?

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. (a) What are the criteria's for Algorithm? Explain. [6M]
(b) Write an algorithm for simple union. Explain with example. [6M]
3. (a) Write an algorithm for merge sort using Divide & Conquer method. [8M]
(b) Find the Best, Average & Worst case time complexity for merge sort. [4M]
4. (a) Write & Explain an algorithm for spanning tree using prim's. [6M]
(b) Find optimal solution for the following of knapsack problem.
If $n = 3$ (P_1, P_2, P_3) = (25, 24, 15) $m=20$ (W_1, W_2, W_3) = (18, 15, 10). [6M]
5. (a) Find the minimum no of operations required for the following chain matrix multiplication using dynamic programming. $A(30,40) * B(40,5) * C(5,15) * D(15,6)$. [8M]
(b) What is 0/1 Knapsack problem? Define merging and purging rules of 0/1 Knapsack problem. [4M]
6. (a) Write an algorithm for 8 – Queen's problem. [6M]
(b) Explain about Hamiltonian cycle. [6M]
7. (a) Discuss the state space tree searched by FIFO Branch & Bound method for the 0/1 knapsack problem instance given by $n=5$; $P = (10,15,6,8,4)$ $W = (4,6,3,4,2)$ $m = 12$. [8M]
(b) Discuss about the following (a) NP – Hard problem. (b) NP – Complete problem. [4M]



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Subject Code: R16MCA304

MCA - III Semester Regular Examinations, Nov – 2017.

WEB TECHNOLOGIES

Time: 3 hours

Max Marks: 60

Question Paper Consists of **Part-A** and **Part-B**.

Answering the question in **Part-A** is Compulsory & Four Questions should be answered from Part-B

All questions carry equal marks of 12.

PART-A

1. a) Explain List Tag with an example.
b) How can you say “swing is advanced than AWT”?
c) Write a short note on cookie.
d) Explain MVC Architecture.
e) What are the advantages of Java Beans?
f) Explain javax.sql.* package.

[2+2+2+2+2+2]

PART-B

4X 12 = 48

2. a) Explain types of CSS with an example.
b) Explain the scope of Java Script variables with an example?
3. a) Write a program that uses at-least 6 AWT components.
b) Explain the life cycle of an Applet with a neat diagram.
4. a) Explain the Servlet API.
b) Explain the usage of cookies in session management.
5. a) What are the problems with Servlets. How does JSP solve them?
b) What are the JSP life cycle phases?
6. a) Write a JSP program that prompts user to enter a number and displays square of it.
b) Explain the process of deploying Java Beans in a JSP Page.
7. a) What are the various types of JDBC Drivers? Explain them with neat diagrams.
b) Write a JSP program that connects database using JDBC.

**NARASARAOPETA ENGINEERING COLLEGE : NARASARAOPET
(AUTONOMOUS)**

DEPARTMENT OF MCA

II MCA (2016 Batch) III sem Examinations, Nov-2017

HUMAN VALUES AND PROFESSIONAL ETHICS

SUBJECT CODE: R16MCA3MNC

Date: 28-11-2017

Max.Marks:60

Time: 180 min

PART-A

6*2=12M

1. (a) Define Ethics.
(b) Egoism
(c) code of dharma
(d) Morals
(e) Gifts Vs Bribe
(f) Self confidence

PART-B

Answer Any FOUR Questions

4*12=48M

2. Briefly explain about problems in Moral Dilemmas.
3. (a) Differentiate Morals and Values.
(b) Explain the importance of Ethics.
4. Explain code of Ethics. Difference between ethics and law.
5. Briefly Explain about
 - (a) Civic Virtue
 - (b) Respect for others
 - (c) Honesty
6. What is Ethics. Explain about Personal Ethics and professional Ethics.
7. Explain the concepts
 - (a) Living peacefully
 - (b) Whistle Blowing