

Code: MC301

LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
L.B. Reddy Nagar :: Mylavaram – 521 230 :: Krishn  Dist.

MCA III SEM. Regular/Supplementary Examinations

3 MAR 2014

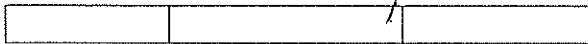
OBJECTED ORIENTED PROGRAMMING THROUGH JAVA

Time: 3 hours

Max. Marks: 60

Answer all the questions.
All Questions carry equal marks

Serial No. of Question		Marks
1(a)	What is idea behind information hiding?	4M
1(b)	What is difference between instance and class?	4M
1(c)	What is meaning of word Paradigm?	4M
OR		
1(d)	Explain briefly what is meant by “pseudocode” and how is it useful in the development of algorithms.	4M
1(e)	What is the main difference between a while loop and a do... while loop?	4M
1(f)	Write a for loop that will print out all the multiples of 3 from 3 to 36, that is: 3 6 9 12 15 18 21 24 27 30 33 36.	4M
2(a)	What is difference between operator overloading and method overloading? Are both possible in JAVA?	8M
2(b)	Can a class contain both static and non-static (that is, regular) methods?	4M
OR		
2(c)	what is dynamic dispatch method? Explain with example.	6M
2(d)	What is significance of super keyword in inheritance? Explain with an example	6M
3(a)	What does it mean to say that a program is robust?	3M
3(b)	Java has a predefined class called Throwable. What does this class represent? Why does it exist?	3M
3(c)	Write a method that prints out a 3N+1 sequence starting from a given integer, N. The starting value should be a parameter to the method. If the parameter is less than or equal to zero, throw an Illegal Argument Exception. If the number in the sequence becomes too large to be represented as a value of type int, throw an Arithmetic Exception.	6M
OR		
3(d)	Why should a subroutine throw an exception when it encounters an error? Why not just terminate the program?	6M
3(e)	Write a complete subclass of Thread to represent a thread that writes out the numbers from 1 to 10. Then write some code that would create and start a thread belonging to that class.	6M
4(a)	Give an invocation of a method to draw a horizontal line from point (30, 40) to point (100, 60). The calling object of type Graphics is named g.	6M

Serial No. of Question		Marks
4(b)	Give an invocation of a method that draws a vertical line of length 100 starting at position (30, 40) and extending downward. Use graphics Object (of type Graphic) as the calling object.	6M
OR		
4(c)	Give an invocation of a method to draw a circle of diameter 100 with the center at position (300, 400). The calling object of type Graphics is named g.	6M
4(d)	Write a brief note on applet.	6M
5(a)	Suppose you are defining a windowing GUI class in the usual way, as a derived class of the class JFrame, and suppose you want to specify a layout manager for the JFrame so as to produce the following sort of layout (that is, a one-row layout, typically having three columns): <div style="text-align: center;">  </div> <p style="text-align: center;">What should the argument to set Layout be?</p>	8M
5(b)	Write class name for Menu Bars, Menus, and Menu Items.	4M
OR		
5(c)	Write code to create a JButton with "Hello" written on it but with "Bye" as its action command.	6M
5(d)	Write code to create a JMenuItem with "Hello" as its displayed text (when it is a choice in a menu) but with "Bye" as its action command.	6M

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M.C.A III Semester Regular/Supplementary Examinations

COMPUTER NETWORKS

5 MAR 2014

Time : 3 hours

Max. Marks: 60

Answer all the questions
All Questions carry equal marks

- 1(a) What are the design Issues for the layers in network software [6M]
- (b) Give the classification of interconnected processors by scale [6M]
- (OR)**
- (c) What is ATM? Explain ATM virtual circuit & cell? [6M]
- (d) Give a comparison of semiconductor diodes and LED's as light sources. [6M]

- 2(a) Give the scenarios for protocol 4 in Dateline layer [6M]
- (b) What is CSMA? Explain about persistent and Non persistent CSMA [6M]
- (OR)**
- (c) Explain 802.11 Frame structure [6M]
- (d) What are the most common kinds of Ethernet cabling with advantages? [6M]

- 3(a) What is Jitter control [5M]
- (b) What is store-and-forward packet switching in Network layer [7M]
- (OR)**
- (c) Explain about Troyjic shaping [6M]
- (d) What is Leaky bucket algorithm? Explain. [6M]

- 4(a) What are the socket primitive for TCP? [7M]
- (b) Write a short on Internet transport protocol: UDP [5M]
- (OR)**
- (c) What is TCP segment header? Explain [6M]
- (d) What are the stator used in the TCP connection management finite state machine. [6M]

- 5(a) Write a short notes on any two of the following [12M]
(i) HTTP (ii) SMTP (iii) WWW
- (OR)**
- (b) What are the principle DMS resource record types for IPs 4? [12M]

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M.C.A·III Semester Regular, Supp – Examinations

SOFTWARE TESTING METHODOLOGIES

7 MAR 2014

Time : 3 hours

Max. Marks: 60

Answer all the questions
All Questions carry equal marks

1. a) Write about Requirement Traceability Matrix. Mention the pros and cons of RTM.
b) What are the essentials of Software Testing (8+4M)
(OR)
- c) Let us suppose that the project duration is 10 months with 22 days of working per month, 8 hours working per day and 100 people are working on it. Also, if conversion rate is say Rs 500 per person hour, then what is the cost of development and testing taken together would be?. Also calculate the sales price (Contingency is 10%, Overhead is 10% and Expected profit is 20%) (8+4M)
- d) Differentiate Mistake, Error and Defect (4+8M)
2. a) Explain about Requirements Testing (6+6M)
b) Explain about Design Testing (OR)
- c) Explain about Control Flow Graphs in detail (7+5M)
- d) Explain the difference between control flow and data flow
3. a) Explain in detail about Test Planning. Also mentions its benefits (8+4M)
b) What is the difference between test plan and quality plan (OR)
- c) Explain Quality Plan Template (12M)
4. a) Give Two examples each for Process Metrics and Product Metrics (2+8M)
b) Explain about Efficiency/Productivity Data (OR)
- c) Explain the following
i) Defect Detection Ability ii) Defect Density
iii) Defect leakage Ratio iii) Residual Defect Density (4X3 12M)
5. a) What is the need for Test Process Improvement?
b) Briefly explain the Testing Environment.
c) Explain about the check and Act phases of Test Process Improvement (3+3+6M)
(OR)
- d) Mention few Guidelines when selecting a tool for testing
e) Explain the difference between in-house software development and software developed by a contractor.
f) What are the factors affecting when we use the tools developed by external organization. (3+6+3M)

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MCA III SEM. Regular/Supplementary Examinations

UNIX NETWORK PROGRAMMING

Time: 3 hours

Max. Marks: 60

Answer all the questions.
All Questions carry equal marks

10 MAR 2014

Serial No. of Question		Marks
1(a)	Explain about search and repeat commands in vi editor with examples.	4M
1(b)	Explain about Networking Utilities.	4M
1(c)	Explain about save and exit commands of ex Mode in Vi editor with examples.	4M
OR		
1(d)	(i) How will you replace has with have in the current line? (ii) How will you combine five lines into single line? (iii) How will you add /* at the beginning of the line and */ at the end? (iv) How to get specific terminal files only? (v) Display all processes including the system processes on the screen?	5x1M = 5M
1(e)	How will you copy a directory structure dir1 to dir2? Does it make any difference if dir2 exists. And How does the command mov dir1 dir2 behave, where both dir1 and dir2 are directories, when (i) dir2 exists (ii) dir2 doesn't exist?	3M
1(f)	Explain about ps and who commands.	4M
2(a)	Write a shell script to accept name of the user as command line argument and check if the same has logged in or not and also display delayed time.	6M
2(b)	Explain about various shells.	6M
OR		
2(c)	Write a shell script to find number of ordinary files and directory files in current directory.	4M
2(d)	Write a shell script to display prime numbers between 1 and n	4M
2(e)	Write a shell script which deletes all lines containing the word UNIX, files supplies as arguments to this shell script.	4M
3(a)	Explain about directory maintenance system calls.	6M
3(b)	Write a program which takes a filename along the command name and checks whether any of its hard link files are there in the current working directory or not. If exists print their name.	6M
OR		
3(c)	Explain briefly about umask, dup and dup2.	6M
3(d)	Explain briefly about unlink, link and symlink.	6M
4(a)	(i) Define Zombie process and explain the concept with example. (ii) List the differences between wait() and waitpid().	6M

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Serial No. of Question		Marks
4(b)	Write a program to implement full duplex communication using pipes.	6M
OR		
4(c)	Define Semaphore. Illustrate Semaphores concept with example program.	6M
4(d)	Explain Unix APIs for Semaphores.	6M
5(a)	Explain the concept of message queues	4M
5(b)	Write a program to implement IPC using message queues.	8M
OR		
5(c)	Explain Unix API for message queues.	8M
5(d)	Explain message queues with the example of client/Server.	4M

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M.C.A III Semester Regular/Supplementary Examinations

ENGLISH LANGUAGE COMMUNICATION SKILLS - II

Time : 3 hours

Max. Marks: 60

Answer all the questions
All Questions carry equal marks

14 MAR 2014

Serial No. of Question		Marks
1 (a)	Change the voice and rewrite the following sentences 1. The people will make him President. 2. One should keep one's promises. 3. Manners reveal character. 4. I was fascinated by the picture. 5. They were gathering the harvest. 6. This work has to be finished by me.	[6X1=6M]
(b)	Distinguish the following pairs of the words and use them in your own sentences 1. Currant / current 2. Die / dye 3. Affect / effect 4. Aural / oral 5. Accede / exceed 6. Ascent / Assent	[6X1=6M]
(c)	(OR) Identify the errors in the following sentences and rewrite them: 1. I and you were moving to the fair. 2. The quality of mangoes are not good. 3. He is senior than me. 4. Do you believe ghosts? 5. The shirt matches to the trousers.	
(d)	6. The boy did not stop from talking.	[6X1=6M]
2 (a)	Mark the 'stress' on the following words: 1. advantageous 2. democracy 3. interogative 4. doctor 5. sixteen 6. extent	[6X1=6M]
	Give the meaning of the following idioms and phrases and use them in your own sentences. 1. Out of the hand. 2. At arm's length. 3. Make hay while the sun shines. 4. To cry over spilt milk. 5. Cat and dog life. 6. Pros and cons	[6X1=6M]

<p>(b)</p> <p>(c)</p> <p>(d)</p> <p>3 (a)</p> <p>(b)</p> <p>(c)</p> <p>(d)</p> <p>4 (a)</p> <p>(b)</p> <p>5 (a)</p> <p>(b)</p>	<p>Change the speech and rewrite the following sentences</p> <ol style="list-style-type: none"> 1. Raman said to Anand, "Go away" 2. Hari said, "The horse died in the night" 3. The police said to the men, "where are you going?" 4. Neema asked if I wanted to cheat her. 5. The servant requested to be excused 6. Umesh says that he will go to school. <p style="text-align: center;">(OR)</p> <p>Identify the sound of the underlined letters and provide the necessary phonetic symbol to the sounds</p> <ol style="list-style-type: none"> 1. <u>Fruit</u> 2. <u>Tea</u> 3. <u>Scheme</u> 4. <u>Hall</u> 5. <u>Rain</u> 6. <u>Enough</u> <p>Define the following:</p> <ol style="list-style-type: none"> 1. Homophone 2. Stress 3. Minimal pair. <p>Explain the major barriers of effective communication.</p> <p>What is Non-verbal communication? Make a note of its importance in communication.</p> <p style="text-align: center;">(OR)</p> <p>What are the requisites of good reading skills?</p> <p>What are the important steps in preparing an effective oral presentation?</p> <p>Write brief notes on formal and non-formal reports. Discuss the various elements of a formal report.</p> <p style="text-align: center;">(OR)</p> <p>Explain in detail the pre-interview preparation techniques.</p> <p>What are the qualities of a good leader?</p> <p>Define teamwork with illustrations.</p>	<p>[6X1=6M]</p> <p>[6X1=6M]</p> <p>[3X2=6M]</p> <p>[6+6M]</p> <p>[6+6M]</p> <p>[12M]</p> <p>[12M]</p> <p>[6+6M]</p>
	<p style="text-align: center;">(OR)</p> <p>(c) Describe the role of culture in communication and how culture affects communication?</p> <p>(d) Discuss in detail about the networking skills.</p>	<p>[6+6M]</p>

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OPERATIONS RESEARCH

12 MAR 2014

Time : 3 hours

Max. Marks: 60

Answer all the questions
All Questions carry equal marks

- 1(a) Define OR. Give the limitations of OR [4M]
 (b) Use Big M method to minimize $Z = 4x_1 + 3x_2$ subject to constraints
 $2x_1 + x_2 \geq 10$
 $-3x_1 + 2x_2 \leq 6$
 $x_1 + x_2 \geq 6, x_1, x_2 \geq 0$ [8M]

(OR)

- (c) Solve graphically the following LPP maximize $Z = 3x_1 + 2x_2$ subject to constraints
 $-2x_1 + x_2 \leq 1$
 $x_1 \leq 2$
 $x_1 + x_2 \leq 3, x_1, x_2 \geq 0$ [6M]
 (d) Obtain the dual problem of the following LPP maximize
 $f(x) = 2x_1 + 5x_2 + 6x_3$ subject constraints $5x_1 + 6x_2 - x_3 \leq 3,$
 $-2x_1 + x_2 + 4x_3 \leq 4, x_1 - 5x_2 + 3x_3 \leq 1,$
 $-3x_1 - 3x_2 + 7x_3 \leq 6, x_1, x_2, x_3 \geq 0$ [6M]

- 2(a) Obtain an initial basic feasible solution to the following transportation problem using North-west corner rule

	D	E	F	G	Available
A	11	13	17	14	250
B	16	18	14	10	300
C	21	24	13	10	400
Requirement	200	225	275	250	

- (b) Explain MODI method

(OR)

- (c) Explain about Hungarian assignment method [6M]
 (d) Write about problems with in jobs and two machines [6M]

- 3(a) A project has the following time schedule
- | | | | | | | | | | | | |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Activity | 1-2 | 1-3 | 1-4 | 2-5 | 3-6 | 3-7 | 4-6 | 5-8 | 6-9 | 7-8 | 8-9 |
| Time in months | 2 | 2 | 1 | 4 | 8 | 5 | 3 | 1 | 5 | 4 | 3 |
- Construct PERT network and compute (i) Total float for each activity (ii) Critical path and its duration. [12M]

(OR)

- (b) Explain the following
 (i) Activity (ii) Critical path (iii) Free float (iv) optimistic time
 (v) Pessimistic time (vi) Expected time [6 x 2M]

- 4(a) In a railway marshalling yard, goods trains arrive at a rate of 30 trains per day. Assuming that the inter-arrival time follows an exponential distribution and service time distribution is also exponential with average 36 min calculate the following
 (i) The mean queue size (ii) The probability that queue size exceeds 10 if the input of trains increases to an average 33 per day. What will be the change in (i) and (ii) [12M]

(OR)

- (b) What is queuing model? What are limitation of queuing theory.
 (c) A TV repairman finds that the time spent on his jobs has an exponential distribution with mean of 30 minutes if the he repairs sets in the order in which they came in and if the arrival of sets is approximately poisson with an average rate of 10 per 8 hours day. What is repairman's expected idle time each day? How many jobs are a head of average set just brought in. [6+6]

- 5(a) Use dynamic programming to solve the following problem minimize $Z = y_1^2 + y_2^2 + y_3^2$ subject to the constraints $y_1 + y_2 + y_3 \geq 15$ and $y_1, y_2, y_3 \geq 0$ [12M]

(OR)

- (b) Use principal of optimality to find the maximum value of $Z = b_1 x_1 + b_2 x_2 + \dots + b_n x_n$ when $x_1 + x_2 + x_3 + \dots + x_n = C$ [12M]

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