



MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY (Autonomous Institution – UGC, Govt. of India)

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DEPARTMENT OF INFORMATION TECHNOLOGY III B.TECH I SEMESTER R15 REGULAR AND SUPPLEMENTARY PREVIOUS QUESTION PAPERS



LIST OF SUBJECTS

CODE	NAME OF THE SUBJECT
R15A0512	Compiler Design
R15A0524	Distributed Systems
R15A0527	Linux Programming
R15A0065	Management Science
R15A0513	Operating Systems
R15A0520	Web Technologies

Code No: R15A0512

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)

III B. Tech I Semester Regular/supplementary Examinations, November 2018

Compiler Design
(CSE&IT)

Roll No										
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a Write the chief differences between compiler and interpreter. [2M]
- b State the role and need of lexical analyzer. [3M]
- c What are the problems with Top down parsing? [2M]
- d List out some typical semantic errors. [3M]
- e Comparison of Top down and Bottom up parsers. [2M]
- f Construct the collection of LR(0) items sets for the following grammar: [3M]
 $S \rightarrow SS \mid a \mid \epsilon$
- g List the attributes of symbol table. [2M]
- h What is a three address codes? What are its types? [3M]
- i What is flow graph? [2M]
- j Discuss briefly about Loop optimization. [3M]

PART-B (50 MARKS)

SECTION-I

- 2 Explain about different phases of compiler in detail with an example? [10M]
OR
- 3 a. What is LEX? Explain with an example program using LEX. [10M]
b. Construct a predictive parsing table for the grammar
 $E \rightarrow E + T / T$
 $T \rightarrow T * F / F$
 $F \rightarrow a / b$

SECTION-II

- 4 a. Construct SLR parsing table for the grammar $S \rightarrow CC$, $C \rightarrow a \mid d$. [10M]
b. Give the YACC programming specifications.

OR

- 5 What is an LALR grammar? Construct LALR parsing table for the following grammar [10M]

$S \rightarrow CC \quad C \rightarrow eC \quad C \rightarrow e/d$

SECTION-III

- 6 a. What is Attribute Grammar? Give the syntax direct definition for a desktop calculator? [10M]
b. Explain about S-attribute definition.

OR

- 7 What is a symbol table? Mention the different approaches to organize symbol table [10M]

SECTION-IV

- 8 a. List the different storage allocation strategies in detail. [10M]
b. What is an Activation Record? Explain the purpose of each field of an Activation Record.

OR

- 9 a. Why do we need intermediate code? What are the types of intermediate code? [10M]
b. Explain about stack storage allocation.

SECTION-V

- 10 a. Explain about DAG. [10M]
b. Discuss various Register Allocation Strategies.

OR

- 11 a. Discuss briefly about different object code forms [10M]
b. Explain the code generation algorithm.

Code No: **R15A0524**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
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III B.Tech I Semester Regular/supplementary Examinations, November 2018

Distributed Systems

(IT)

Roll No									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- | | | |
|-------|---|-------------|
| 1). a | What is the prime motivation for constructing and using distributed systems? | [2M] |
| b | List the significant factors affecting interacting processes in a distributed system? | [3M] |
| c | How do you define the history of process p_i ? | [2M] |
| d | How computer clocks can be synchronized to external sources of highly accurate time? | [3M] |
| e | What is meant by marshalling? | [2M] |
| f | What is request- reply protocol? | [3M] |
| g | What is the use of directory service in a distributed file system? | [2M] |
| h | Why sequential consistency is a slightly weaker memory model? | [3M] |
| i | How a nested transaction is operated in DS? | [2M] |
| j | What is the responsibility of the servers of distributed transactions? | [3M] |

PART-B (50 MARKS)

SECTION-I

- | | | | |
|----|----|--|-------------|
| 2. | a. | Illustrate the concept of resource sharing, client and server by using internet as an example. What are the advantages and disadvantages of HTML, URLs and HTTP as core technologies for information browsing? | [5M] |
| | b. | Explain the challenges produced by the construction of distributed systems? | [5M] |
| OR | | | |
| 3. | a. | Describe possible occurrences of each of the main types of security threat (threats to processes, threats to communication channels, denial of service) that might occur in the Internet with respect to security model. | [5M] |
| | b. | Write a brief note on internetworking concepts of distributed systems. | [5M] |

SECTION-II

- | | | | |
|----|----|---|--------------|
| 4. | | Why is computer clock synchronization necessary? Describe the design requirements for a system to synchronize the clocks in a distributed system. | [10M] |
| OR | | | |
| 5. | a. | Give an example of execution of the ring based algorithm to show that processes are not necessarily granted entry to the critical section in happened before order? | [5M] |

- b. Show that Byzantine agreement can be reached for three generals, with one of them faulty, if the generals digitally sign their messages. [5M]

SECTION-III

6. Explain the RMI architecture with relevant illustrations ? [10M]

OR

7. a. Explain how the container-based philosophy could be adopted to provide migration transparency for distributed components? [5M]
b. Describe the ways in which the request-reply protocol masks the heterogeneity of operating systems and of computer networks. [5M]

SECTION-IV

8. Describe the names (including identifiers) and attributes used in a distributed file service such as NFS? [10M]

OR

9. a. Explain in detail about the distributed File system modules. [5M]
b. What are the design and implementations issues of distributed shared memory? Explain. [5M]

SECTION-V

10. A server manages the objects a_1, a_{21}, \dots, a_n . The server provides two operations for its clients: [10M]

- $read(i)$ returns the value of a_i $write(i, Value)$ assigns $Value$ to a_i
- The transactions T and U are defined as follows:
- $T: x = read(j); y = read(i); write(j, 44); write(i, 33);$
- $U: x = read(k) write(i, 55); y = read(j); write(k, 66).$
- Give three serially equivalent interleaving of the transactions T and U .

OR

11. Explain how the two-phase commit protocol for distributed transactions is implemented with an example. [10M]

Code No: **R15A0527****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**
(Autonomous Institution – UGC, Govt. of India)**III B.Tech I Semester Regular/supplementary Examinations, November 2018****Linux Programming**
(IT)

Roll No										
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a What are the filter commands in Linux? [2M]
- b Define a shell and its commands [3M]
- c Discuss file and record locking. [2M]
- d Define a directory and its commands [3M]
- e What is an orphan Process? [2M]
- f Discuss about the functionality of sleep() and pause() signals [3M]
- g Explain the differences between unnamed and named pipes. [2M]
- h What is a Message Queue? Explain its operations. [3M]
- i Discuss about popen() and pclose() library functions. [2M]
- j Discuss client-server interaction. [3M]

PART-B (50 MARKS)**SECTION-I**

- 2 Explain various Text Processing utilities in detail. [10M]
- OR
- 3 a) What is a Shell? Explain Shell Meta characters. [5M]
 - b) Write a shell script to find the factorial of a given number. [5M]

SECTION-II

- 4 a) Explain the UNIX File system structure. Discuss with appropriate diagram. [5M]
 - b) Discuss different file i/o operations with examples. [5M]
- OR
- 5 a) Discuss various file permissions in detail [5M]
 - b) How to link different files. Explain [5M]

SECTION-III

- 6 a) What is an zombie process? Write a program to illustrate zombie process. [5M]
 - b) Explain various exit statuses with an example program. [5M]
- OR
- 7 Explain the following with example: [10M]
- (a) Process Creation
 - (b) Process Termination

Code No: **R15A0065****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

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III B.Tech I Semester Regular/supplementary Examinations, November 2018**Management Science
(CSE& IT)**

Roll No										
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a What do you understand by systems approach to management? [2M]
 b Brief on the social responsibilities of management [3M]
 c What is Matrix Organization structure? [2M]
 d Brief on the functions of marketing [3M]
 e State the job evaluation techniques [2M]
 f Differentiate between HRM and PMIR [3M]
 g Define vision and mission statements [2M]
 h Discuss the purpose of network analysis. [3M]
 i Brief on the corporate planning process [2M]
 j Discuss the role of environmental scanning in strategic management. [3M]

PART-B (50 MARKS)**SECTION-I**

- 2 Define management, its importance and discuss scientific management theory in detail. [10M]

OR

- 3 Define motivation discuss the Theory of Human Needs, Herzberg's Two- Factor Theory of Motivation. [10M]

SECTION-II

- 4 How organization structuring will be done? and discuss the types of organization structures with their merits, demerits and suitability of them for different business enterprises. [10M]

OR

- 5) a. Krishna runs a mail-order business for gym equipment , annual demand for the Trico Flexers is 16,000 units. The annual holding cost per unit is Rs.3.50/- and the cost to place an order is Rs.50/- [5M]
Calculate economic order quantity (EOQ)

- b. A company makes bicycles. It produces 450 bicycles a month. It buys 10,800 tires for bicycles from a supplier at a cost of Rs.20 per tire. The company's [5M]

inventory carrying cost is estimated to be 15% of cost and the ordering is Rs. 50 per order.

Calculate economic order quantity (EOQ)

SECTION-III

6 Why Wage and Salary Administration is considered as a significant Human Resource Management function? What principles an organization is require keeping in mind while deciding compensation policy? [10M]

OR

7 What is Training? And discuss about different methods of training. [10M]

SECTION-IV

8 The following table show the information related to a project that involves the merger of two marketing firms (in days). [10M]

Task	Description	Duration (Working Days)	Predecessor/s
A	Requirement Analysis	5	
B	Systems Design	15	A
C	Programming	25	B
D	Telecoms	15	B
E	Hardware Installation	30	B
F	Integration	10	C,D
G	System Testing	10	E,F
H	Training/Support	5	G
I	Handover and Go-Live	5	H

- a. Determine the critical path of the project
- b. Calculate the planned duration of the project in weeks

OR

9 Discuss how the project manager should go about analysing the costs while different activities are to be crashed in a project? [10M]

SECTION-V

10 Define the elements strategic management and state the role of SWOT analysis in strategic management with an industrial illustration. [10M]

OR

11 Discuss the steps in formulation and implementation of strategy with relevant illustrations. [10M]

Code No: **R15A0513****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Regular/supplementary Examinations, November
2018****Operating Systems
(CSE&IT)**

Roll No									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a Define Operating System. List out the objectives of an operating system. [2M]
- b Define system calls. Explain the main purpose of an operating system [3M]
- c What is semaphore? [2M]
- d Describe different process states. [3M]
- e Write the difference between internal and external fragmentation [2M]
- f Write the first ,best fit memory allocation techniques [3M]
- g Define boot block. How it initiated from disk [2M]
- h What are the various attributes that are associated with an opened file [3M]
- i Describe the Safe, unsafe, and deadlock state spaces [2M]
- j List the goals and principles of protection [3M]

PART-B (50 MARKS)**SECTION-I**

- 2 Discuss about the evolution of operating system [10M]
- OR

- 3 Explain the purpose of system calls and discuss the system calls related to process control and communication in brief [10M]

SECTION-II

- 4 Discuss any five process scheduling algorithms with examples [10M]

OR

- 5 a) Write the solution to Dining Philosophers problem using Monitors [5M]
- b) Explain the Round Robin scheduling algorithm with a suitable example [5M]

SECTION-III

- 6 Given page reference string: 1,2,3,2,1,5,2,1,6,2,5,6,3,1,3,6,1,2,4,3. Compare the number of page faults for LRU, FIFO and Optimal page replacement algorithm [10M]

OR

- 7(a) Discuss about paging with neat diagram [5M]

- (b) Explain the various structure of page table [5M]

SECTION-IV

- 8 a) Explain the three allocation methods in file system implementation. Illustrate with proper diagram [5M]
 b) How to organize the mass storage? Explain [5M]

OR

- 9 Discuss various disk scheduling algorithm with examples. [10M]

SECTION-V

- 10 Consider the table given below for a system, find the need matrix and the safety sequence, using Banker's algorithm. [10M]

Resource – 3 types

A – (10 instances)

B – (5 instances)

C – (7 instances)

Process	Allocation			Maximum			Available		
	A	B	C	A	B	C	A	B	C
p0	0	1	0	7	5	3	3	3	2
p1	2	0	0	3	2	2			
p2	3	0	2	9	0	2			
p3	2	1	1	2	2	2			
p4	0	0	2	4	3	3			

OR

- 11 a) Discuss about Access Matrix [5M]
 b) Write a note on domain of protection [5M]

Code No: **R15A0520****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**
(Autonomous Institution – UGC, Govt. of India)**III B.Tech I Semester Regular/supplementary Examinations, November 2018****Web Technologies**
(IT)

Roll No									
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Time: 3 hours**Max. Marks: 75****Note:** This question paper contains two parts A and B

Part A is compulsory which carries 25 marks and Answer all questions.

Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

PART-A (25 Marks)

- 1). a Write the difference between XML and HTML [2M]
- b Write about different list tags in HTML [3M]
- c What is well-formed XML document [2M]
- d Explain in brief about XML schema [3M]
- e List out life cycle of servlet [2M]
- f What do we need to deploy a web service? [3M]
- g Discuss about JSP processing [2M]
- h List out problem with servlet [3M]
- i Write about struts framework [2M]
- j Discuss methods error Handling [3M]

PART-B (50 MARKS)**SECTION-I**

- 2 a)List out MIME types [5M]
- b) Explain different types of cascading style styles with suitable examples. [5M]

OR

- 3 a)Show how group and alignment of tables, rows and columns is achieved using HTML? [5M]
- b) Write a JavaScript code to test whether the given number is Armsstrong number or not [5M]

SECTION-II

- 4 Explain with an example, how can you check an XML document is both valid and well formed document [10M]

OR

- 5 Explain briefly note on XML parsers. Distinguish between SAX and DOM. [10M]

SECTION-III

- 6 a)Describe the life cycle of a java servlet and write a simple servlet that reads three parameters from the form data [5M]
- b)What is Bean? Discuss how to create beans in JSP [5M]

OR

- 7 a) Write the differences between Servlet and Applets [5M]
b) Explain about servlet? And explain its types of servlet. [5M]

SECTION-IV

- 8 a)Write in brief about JSP tag extensions and libraries. [5M]
b)Explain the problem with servlets in detail [5M]

OR

- 9 Describe the anatomy of JSP page. [10M]

SECTION-V

- 10 Discuss accessing database from a JSP with example [10M]

OR

- 11 Explain Struts frame work. [10M]
