



# 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 SUPPLEMENTARY PREVIOUS QUESTION PAPERS



## LIST OF SUBJECTS

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

code No: **R15A0512****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, February 2021****Compiler Design****(CSE&IT)**

Roll No									

**Time: 2 hours 30 min****Max. Marks: 75**Answer Any **Five** Questions

All Questions carries equal marks.

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- 1 Explain the various phases of a compiler with an illustrative example. [15M]
- 2 Consider the following Conditional statement: [15M]  
if ( $x > 3$ ) then  $y = 5$  else  $y = 15$ ;  
How does lexical analyzer help the above statement in process of compilation?
- 3 Construct the LR Parsing table for the following grammar: [15M]  
 $E \rightarrow E + T \mid T$   
 $T \rightarrow T * F \mid F$   
 $F \rightarrow (E)/id$
- 4 What is FIRST and FOLLOW? Explain the steps to compute FIRST and FOLLOW with an example. [15M]
- 5 What is a three address code? Mention its types. How would you implement the three address statements? Explain with examples. [15M]
- 6 Explain various storage allocation strategies with its merits and demerits [15M]
- 7 Discuss various techniques of function preserving transformations for code optimization [15M]
- 8 Explain in brief about the issues in the design of code generator. [15M]

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**Code No: R15A0524****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, February 2021****Distributed Systems****(IT)**

<b>Roll No</b>									
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**Time: 2 hours 30 min****Max. Marks: 75**

Answer Any **Five** Questions  
All Questions carries equal marks.

- 1 State and Explain the challenges of distributed systems. [15M]
- 2 What are the models of distributed system? and explain in detail [15M]
- 3 Explain Distributed deadlock detection with illustrations. [15M]
- 4 What is Logical Clock and Write about Logical Clocks in the Email Scenario [15M]
- 5 Explain how Inter process communication is handled in UNIX. [15M]
- 6 What are events and notifications in distributed system? explain in detail [15M]
- 7 Write and Explain in detail the Andrew File System [15M]
- 8 Explain in detail about concurrency control in Transaction. [15M]

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**Time: 2 hours 30 min**

**Max. Marks: 75**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 Write about the following Linux commands with example. [15M]  
Cal, date, echo, printf, script, who, chmod
- 2 a)Write a shell script to check the given number is prime [15M]  
b)List and explain the various meta characters available in shell programming
- 3 Differentiate between the following terms: [15M]  
a) i) getc( ) Vs fgetc( ) ii) stat( ) Vs fsat( )  
b) i)printf( ) Vs fprintf( ) ii)scanf( ) Vs fscanf( )
- 4 Explain in detail about File and Record Locking in UNIX [15M]
- 5 What is Unix process status (ps) and explain the procedures for [15M]  
Process creation ,replacing a process image , waiting for a process,process  
termination and Zombie process
- 6 a) What is the need of exec( ) system call?Write a C program to illustrate exec( [15M]  
 ) function.  
b) Differentiate between reliable signals and unreliable signals
- 7 List some APIs used for message queues and construct a sample code for [15M]  
Client – Server application messages
- 8 Make a comparison of various IPC mechanisms [15M]

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

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, February 2021****Management Science****(CSE & IT)**

<b>Roll No</b>									
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**Time: 2 hours 30 min****Max. Marks: 75**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 Describe the nature and function of management. [15M]
- 2 According to Herzberg, what are the two types of factors that influence motivation in any organization? [15M]
- 3 Explain the team and matrix organisation structure with merits and demerits. [15M]
- 4 Analyse the stages in Product Life Cycle with the help of diagram. [15M]
- 5 Define HRM. Explain the process of HRM with a block diagram. Discuss the reasons for employee separation in an organisation. [15M]
- 6 Evaluate On-the-Job and Off-the-Job training methods. [15M]
- 7 An R&D project has a list of tasks to be performed whose time estimates are given in the table as follows: [15M]

Activity	Activity name	$t_o$	$t_m$ (in days)	$t_p$
1 – 2	A	4	6	8
1 – 3	B	2	3	10
1 – 4	C	6	8	16
2 – 4	D	1	2	3
3 – 4	E	6	7	8
3 – 5	F	6	7	14
4 – 6	G	3	5	7
4 – 7	H	4	11	12
5 – 7	I	2	4	6
6 – 7	J	2	9	10

- I. Draw the project network
  - II. Find the critical path
- 8 What is a Strategy? List out the steps in Strategy formulation, implementation and evaluation. [15M]

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

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, February 2021****Operating Systems****(CSE&IT)**

<b>Roll No</b>									
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**Time: 2 hours 30 min****Max. Marks: 75**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 What are system calls? Illustrate them with an example? [15M]
- 2 With a neat Diagram, Discuss the Layered structure of operating system? [15M]
- 3 Consider the following set of processes, with the length of the CPU burst given in milliseconds: [15M]

Process	Burst Time	Priority
P1	15	3
P2	1	1
P3	2	4
P4	1	5
P5	5	2

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5, all at time 0. Draw Gantt chart that illustrate the execution of these processes using the non preemptive priority (a smaller priority number implies a higher priority) scheduling algorithm. What is the turnaround time and waiting time of each process?

- 4 Analyze any two Classical Synchronization Problems with clear examples. [15M]
- 5 Sketch the structure of page table. What is the purpose of paging the page tables? [15M]
- 6 Illustrate the following Page Replacement algorithms with clear examples. [15M]  
(a)Second Chance(SC) (b)Not Recently used(NRU)
- 7 Describe various file allocation methods with their relative advantages and disadvantages. [15M]
- 8 How resource allocation graph is useful in Deadlock detection? Explain? [15M]

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Code No: **R15A0520****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, February 2021****Web Technologies****(IT)**

<b>Roll No</b>									
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**Time: 2 hours 30 min****Max. Marks: 75**

Answer Any **Five** Questions  
All Questions carries equal marks.

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- 1 Create, test, and validate an HTML document to describe an unordered list of at least four states. Each element of the list must have a nested list of at least three cities in the state. **[15M]**
- 2 a) Define frame? Create a HTML page that displays multiple frames in a window. **[7M]**  
b) Explain built in objects in JavaScript with the examples **[8M]**
- 3 a) Explain in brief about DOM **[7M]**  
b) How do you create a Java Beans? Why do we use beans in Java **[8M]**
- 4 a) Explain the creation of XML schema with an example. **[7M]**  
b) Show how SAX is an alternative method for parsing XML documents. **[8M]**  
Write its advantages
- 5 a) What is Servlet and Explain the Lifecycle of a Servlet **[7M]**  
b) Explain the handling of cookies and sessions in Java, using Servlets **[8M]**
- 6 a) What is HTTP package? Explain Handling Http Request & Responses **[7M]**  
b) What is Jsdk? **[8M]**
- 7 Explain JDBC drivers with examples each **[15M]**
- 8 a) What are the benefits of struts framework **[7M]**  
b) Explain implicit JSP objects **[8M]**

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