



# 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 R17 SUPPLEMENTARY PREVIOUS QUESTION PAPERS



## LIST OF SUBJECTS

<b>CODE</b>	<b>NAME OF THE SUBJECT</b>
<b>R17A1201</b>	<b>Automata &amp; Compiler Design</b>
<b>R17A0514</b>	<b>Computer Networks</b>
<b>R17A1251</b>	<b>Introduction to Scripting Languages</b>
<b>R17A0525</b>	<b>Linux Programming</b>
<b>R17A0513</b>	<b>Operating Systems</b>
<b>R17A0519</b>	<b>Web Technologies</b>

Code No: R17A1201

**MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, June 2022****Automata & Compiler Design****(IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

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

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- 1 If L is accepted by an NFA with  $\epsilon$ -transition then show that L is accepted by an NFA without  $\epsilon$ -transition. [14M]
  
- 2 Consider the following grammar [14M]
  - $E \rightarrow E \text{ or } T \mid T$
  - $T \rightarrow T \text{ and } F \mid F$
  - $F \rightarrow \text{not } F \mid (E) \mid \text{true} \mid \text{false}$
  - (i) Remove left recursion from the grammar.
  - (ii) Construct a predictive parsing table.
  - (iii) Justify the statement “ The grammar is LL (1)”.
  
- 3 Derive LALR (1) parsing algorithm for following grammar [14M]
  - $S \rightarrow AS/b$
  - $A \rightarrow SA/a$
  
- 4 Define S-attributed and L-attributed definitions. Give an example each. [14M]
  
- 5 Explain the chomsky hierarchy of languages and recognizers. [14M]
  
- 6 Write a note on simple type checker and list the different types of type checking. [14M]
  
- 7 How is storage organization and management done during runtime? [14M]
  
- 8 Explain the generic code generation algorithm with example. [14M]

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**Code No: R17A0514****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, June 2022****Computer Networks****(CSE)**

<b>Roll No</b>										
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**Time: 3 hours****Max. Marks: 70**

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

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- 1** Compare and contrast the OSI and TCP/IP reference models. **[14M]**
- 2** What do you mean by computer network? Classify computer networks and Explain them in brief. **[14M]**
- 3** What are the various types of error detection methods? **[14M]**
- 4** How CSMA is useful in flow control? Explain in detail. **[14M]**
- 5** Write briefly about Congestion control in datagram subnets **[14M]**
- 6** What are the classes of IP V4? Explain in detail. **[14M]**
- 7** Draw and explain each field in the TCP Segment header **[14M]**
- 8** Write a short notes on following.
  - i) HTTP. **[5M]**
  - ii) E-mail. **[5M]**
  - iii) Web documents. **[4M]**

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**Code No: R17A1251****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, June 2022****Introduction to Scripting Languages****(IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**

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

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- 1** What is the Origin of Scripting? What is the state of Scripting Today? Discuss in detail about Scripting and the universe of Scripting Languages [14M]
- 2** Explain Perl. When do you use Perl for programming? What are the advantages of Programming in Perl? [14M]
- 3** Define Frame. Explain Various Frame elements that are required for registration page of any exam portal with example program. [14M]
- 4** Illustrate Various Control structures and Conditional statements in Java Script with clear examples. [14M]
- 5** Discuss in detail about various tags in HTML with examples. [14M]
- 6** What is Python? Write the Procedure for Running Python Scripts. Describe its features and applications? [14M]
- 7** List different operators in Python, in the order of their precedence. Write a Python program that interchanges the first and last characters of a given string. [14M]
- 8** Define Function? Write Various Parameter Passing Methods with suitable Examples. [14M]

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Code No: **R17A0525****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, June 2022****Linux Programming****(IT)**

<b>Roll No</b>										
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**Time: 3 hours****Max. Marks: 70**Answer Any **Five** Questions

All Questions carries equal marks.

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- 1 Explain ftp and its importance in Linux? Write a shell script which checks whether a given file contains a given word. If it does, the script should output the message "The file contains the word"; if not, it should output the message "The file doesn't contain the word". [14M]
- 2 Define grep. Write a grep command to display the lines which does not matches all the given pattern. Describe about I/O Redirection operations and built in variables in Shell. [14M]
- 3 Analyze the following commands with syntax and Examples: [14M]  
(a)close (b)lseek (c)lchown (d)link
- 4 Illustrate any 5 directory handling system calls with their syntaxes and examples [14M]
- 5 Differentiate between fork( ) and vfork( )? Write the syntax of six versions of exec functions and also explain how these functions differ from each other [14M]
- 6 Give brief description about the signal mask?Write a c program that accepts two small numbers as arguments and then sums the two numbers in a child process. The sum should be returned by child to the parent as its exit status and the parent should print the sum? [14M]
- 7 List Various APIs for message queues .Write a program and explain how to transfer a large amount of data between two processes using Message queues. [14M]
- 8 Explain how to attach and detach a shared-memory segment. how to control a shared-memory segment. [14M]

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Code No: **R17A0513****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY**

(Autonomous Institution – UGC, Govt. of India)

**III B.Tech I Semester Supplementary Examinations, June 2022****Operating Systems****(CSE & IT)**

<b>Roll No</b>									
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**Time: 3 hours****Max. Marks: 70**Answer Any **Five** Questions

All Questions carries equal marks.

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- 1 State the various components of operating system structure and explain the simple and layered approach of operating system in detail. [14M]
- 2 Explain the actions taken by a thread library to context-switch between user level threads. Also, Briefly explain the inter-process communications. [14M]
- 3 Differentiate the following with examples:
  - a) Process scheduling and thread scheduling [7M]
  - b) Optimal and LRU Page replacement algorithm [7M]
- 4 Does preemptive scheduling give same performance as non-preemptive scheduling algorithm? Compare their performance by assuming at least 5 processes arrived at different time intervals. [14M]
- 5 Demonstrate about Dining Philosophers problem? Discuss the solution to Dining philosopher's problem using monitors. [14M]
- 6 Write a short notes on:
  - i) Demand Paging. [7M]
  - ii) Segmentation. [7M]
- 7 Explain various file access methods with suitable examples. [14M]
- 8 Explain the Resource-Allocation-Graph algorithm for deadlock avoidance. [14M]

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**Code No: R17A0519****MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY****(Autonomous Institution – UGC, Govt. of India)****III B.Tech I Semester Supplementary Examinations, June 2022****Web Technologies****(IT)**

<b>Roll No</b>										
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**Time: 3 hours****Max. Marks: 70**

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

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- 1** Outline the structure of a JavaScript program. Also explain how a JavaScript can be included in HTML documents. **[14M]**
- 2** Design a web page for storing user-id and password information using HTML Forms. **[14M]**
- 3** Define operator? Illustrate different operators used in PHP with clear examples. **[14M]**
- 4** Collect the student's details such as, register number, name, subject and marks using forms and generate a DTD for this XML document. Display the collected information in the descending order of marks. Write XML source code for the above. **[14M]**
- 5** Develop a servlet that handles an HTTP POST request. **[14M]**
- 6** With a Neat diagram, Discuss about various phases in the Lifecycle of a Servlet. **[14M]**
- 7** Recall the architecture of JDBC type- 2 driver and list out its advantages. **[14M]**
- 8** Describe the anatomy of a JSP page. Write in brief about JSP Declarations. **[14M]**

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