Code No.: **70514**

MR17

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)

Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Scripting Languages**

Branch: **CSE**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. What are the benefits of '**C**' over '**Perl**'?
2. Why **mail()** function is used in php?
3. Express the value 3.64×10−5 as a Python literal?
4. List the environment variables in Perl and how it will be set?
5. Design a Tcl syntax for regular expression.

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. a. Explain about the following loop with syntax and write example program for each.
   i) Do-while ii) Nested loop
   b. Write a subroutine for biggest of three number.

OR

2. a. Develop a subroutine to add the sum of 'n' numbers in Perl.
   b. What is "scalar" context, "list" context? Would you be able to write an example in Perl to demonstrate how they differ?
3. a. How can u simulate C structs with pack and unpack functions? **[3+3=6]**
   b. Differentiate between shell scripting and Perl. **[4]**

OR

4. a. Explain how inheritance could be implemented in Perl with an example.
   b. Discuss how to develop a chat application in Perl.
5. a. Explain in detail about File Inclusion with include () Function and require () Function
   b. Write a PHP code for browser Redirection using GET & POST Methods.

OR

6. Explain about the preg_filter(), preg_grep(), preg_match(), preg_match_all() and preg_quote() functions with example for each in PHP.
7. a. Describe briefly about namespaces in TCL. **[3]**
   b. Explain about Recursion and Procedures in TCL? **[3]**
   c. Explain about puts and gets commands in TCL. **[4]**

OR

8. a. Write TCL code for Modifying Strings to lower, to upper, trim and format
   b. Write TCL code for finding floating-point numbers in a line of text
9. a. Define modules? Explain how data is imported from modules into the python programming environment. **[2+4=6]**
   b. Write a Python program that simply emits a beep sound when run. **[4]**

OR

10. a. Explain the built-in function and methods in python.
    b. Describe classical web server architecture with neat sketch.

Code No.: **70513** **MR17**

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GundlapochampALLy (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Formal Languages and Automata Theory**

Branch: **CSE**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. Differentiate Moore and Melay Machines.
2. Define Pumping Lemma.
3. Define Pushdown Automata and explain its model.
4. Explain the moves in Turing Machine.
5. Define P and NP? Give some examples that fall into the class of P and NP?

PART-B

Answer ALL Questions of the following **5x10 Marks= 50Marks**

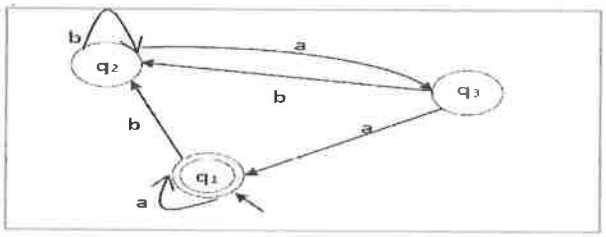
1. **Construct** NFA for (0 + 1)*(00 + 11)(0 + 1)* and Convert to DFA.

OR

2. **a.** Construct DFA and NFA accepting the set of all strings not containing 101 as a substring
   b. Design finite automata that accepts all strings with even no. of 1 and odd no. of 0's over $\sum = \{0,1\}$.
3. Show that $L = \{ a^n b^n \mid n \geq 1 \}$ is not regular.

OR

4. **Convert** given Finite Automat to Regular Expression using Arden's theorem .



5. a) Construct equivalent grammar in Chomsky Normal Form for the grammar
   G= ({S,A,B, {a,b}, S->bA/aB, A->bAA/aS/a, B->aBB/bS/b } ,S}
   b) Give an example to explain the Relation between Regular Grammar and Finite Automata.

OR

6. **Illustrate** the construction of Griebach normal form with an example.
7. a) Explain about Recursively Enumerable languages.
   b) Write short notes on Counter machines.

OR

8. **a.** Explain briefly about model of Turing Machine?
   b. Design a Turing Machine to compute Max(n1, n2)
9. a) Discuss about undecidability problems.
   b) Describe LR(k) grammars.

OR

10. a) Write short notes on Context sensitive languages.
    b) Explain context sensitive grammar? Give examples

Code No.: **70610**

MR17

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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GundlapochampALLy (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Web Technologies**

Branch: **CSE**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. Explain how Frames are created with an example.
2. What is XML? List characteristic features of XML.
3. What is web container?
4. What is a database driver?
5. Write a JSP program to insert the data into a database.

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. a) Create a Personal Website by using HTML Tables Concept.
   b) Explain the features of DHTML.

OR

2. Design the home page of an engineering college with the help of frames and frameset tags.

3. a) What is a JAVA Bean? Discuss the Features of JAVA Beans.
   b) Write about Constrained Properties in JavaBeans.

OR

4. Explain the importance of XML schemas in XML programming with suitable example?

5. A. Develop a Servlet that handles an HTTP POST request.
   B. Explain the differences between Generic Servlet and HttpServlet.

OR

6. Demonstrate the process of sharing the data using sessions and cookies in servlet.

7. a) Explain about the database connectivity using JDBC.
   b) Write in brief about JSP Declarations.

OR

8. a) What is JDBC? Explain various drivers of JDBC?
   b) Describe the anatomy of a JSP page.

9. a) Discuss in detail about JSP Implicit Objects.
   b) Explain about sharing data and sessions in JSP.

OR

10. a) How users can pass control between JSP pages? Explain with an example.
    b) Write a JDBC program to Insert Student Six Subject Marks into Database Table.

Code No.: **70512**

MR17

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Operating Systems**

Branch: **CSE**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. Define kernel
2. Define thread
3. Define RAG with an example.
4. What do you mean by page fault?
5. State some of the ways of file access mechanisms.

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. a) What is Operating system? Explain in brief the structure of Operating system?
   b) List any four process management system calls.

(OR)

2. Explain the purpose of system calls and discuss the system calls related to process control and communication in brief.
3. a) What are the different principles which must be considered while selection of a scheduling algorithm?
   b) List the three requirements that must be satisfied by critical section problem.

(OR)

4. Discuss about Monitors using the semaphores.
5. A system has four processes P1 through P4 and two resource types R1 and R2. It has 2 units of R1 and 3 units of R2. Given that:

   P1 requests 2 units of R2 and 1 unit of R1
   P2 holds 2 units of R1 and 1 unit of R2
   P3 holds 1 unit of R2
   P4 requests 1 unit of R1

   Show the resource graph for this state of the system. Is the system in deadlock, and if so, which processes are involved?

(OR)

6. Write in detail about Deadlock Avoidance.
7. What do you mean by RAID Structure? Also discuss different types of RAID levels.

(OR)

8. a) What is virtual memory? How it is implemented.
   b) Explain Segmentation in detail.
9. Briefly explain about single-level, two-level and Tree-Structured directories.

(OR)

10. a) What is directory? Explain directory operation in details.
    b) Explain briefly file system architecture & file management function.

Code No.: **70B04** | **MR17**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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GundlapochampALLy (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Probability and Statistics**

Branch: **Common to CE, ME, CSE, IT & MINING**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. Define mode. Explain how it is calculated for individual and discrete series.
2. Define mutually exclusive events and give two examples.
3. Write moment generating function of Normal Distribution.
4. Write the procedure for testing of hypothesis.
5. Define chi square test

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. Calculate coefficient of skewness based on Quartiles

Profit	Below 10	10-20	20-30	30-40	40-50	Above 50
No of Companies	5	12	20	16	5	2

OR

2. Calculate the Mean and Standard Deviation from the following data:

Value	90-99	80-89	70-79	60-69	50-59	40-49	30-39
Frequency	2	12	22	20	14	4	1

3. a) State and prove multiplication theorem of probability.
   b) Determine i) P (B/A) ii) P ($A/^{Bc}$). If A and B are the events with P (A) = 1/3, P (B) = ¼, P (AUB) = ½.

OR

4. a) .In a committee of 25 members, each member is proficient either Mathematics or in statistics or in both. If 19 of them are proficient in Mathematics,16 in statistics, Find the probability that a person selected from the committee is proficient in both.
   b) A card is drawn from a well shuffled pack of cards. What is the probability that is either a spade or an ace?

5. A random variable X has the following probability function:

X	0	1	2	3	4	5	6	7
P(x)	0	k	2k	2k	3k	K^2	$2k^2$	$7k^2+K$

i) Determine k ii) evaluate $P(x<6)$, $P(x\geq 6)$, $P(0<x<5)$ and $P(0\leq x\leq 4)$ iii) if $P(x \leq L) > ½$, find minimum value of L iv) Determine the distribution function of X v) Mean vi) variance

OR

6. Derive the mean and variance of a binomial distribution?

7. a) In a sample of 600 students of a certain college, 400 are found to use ball pens. In another college from a sample of 900 students, 450 were found to use ball pens. Test whether 2 colleges are significantly different with respect to the habit of using ball pens.

b) Assuming that $\sigma = 20.0$, how large a random sample be taken to assert with probability 0.95 that the sample mean will not differ from the true mean by more than 3.0 points?

OR

8. (a) Among 900 people in a state 90 are found to be chapatti eaters. Construct 99% confidence interval for the true proportion.

(b) A manufacturer claimed that atleast 95% of the equipment which he supplied to a factory conformed to specifications. An examination of a sample of 200 pieces of equipment revealed that 18 were faulty. Test his claim at 5% level of significance.

9. The time taken by workers in performing a job by method I and method II is given below:

Method I	20	16	26	27	23	22	-
Method II	27	33	42	35	32	34	38

Do the data show that the variances of time distribution from population from which these samples are drawn do not differ significantly?

OR

10. a) Pumpkins were grown under two experimental conditions. Two random samples of 11 and 9 pumpkins, show the sample standard deviations of their weights as 0.8 and 0.5 respectively. Assuming that the weight distributions are normal, test hypothesis that the true variances are equal.

b) From the following data, find whether there is any significant liking in the habit of taking soft drinks among the categories of employees.

Soft Drinks	Clerks	Teachers	Officers
Pepsi	10	25	65
Thums up	15	30	65
Fanta	50	60	30

Code No.: **70511**

MR17

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II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Database Management Systems**

Branch: **Common to CSE & IT**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. List any four differences between Database Systems and File Systems.
2. Define primary key and foreign key.
3. What is functional dependency?
4. List and describe various phases in validation based protocols
5. What is Heap File Organization?

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. a) What are the disadvantages of file system?
   b) What is a data model? What are the different data models? Explain E-R model and relation model briefly.

(OR)

2. Illustrate and draw an ER Diagram for Banking Enterprise System?
3. a) What is a view? Explain how views are implemented?
   b) Write short notes on triggers.

(OR)

4. Explain the Relational Algebra and Calculus?
5. a) Explain trivial and non trivial dependencies.
   b) Define normalization. Why do we need to normalized databases?

(OR)

6. Explain about Lossless Decomposition and List out the Properties of Lossless Decomposition?
7. What are the properties of a transaction? Explain how to implement atomicity and durability using shadow copy technique.

(OR)

8. When does deadlock occurs? Explain two-phase commit protocol with example.
9. What is hashing? Give an overview of static and dynamic hashing.

(OR)

10. a) Explain how B+ tree eliminate the redundant storage of search key values.
    b) Explain single level and multi level indexing.

Code No.: **70M03** **MR17**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

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Gundlapochampally (H), Maisammaguda (V), Medchal (M), Medchal-Malkajgiri (Dist), Hyderabad

II B.TECH II SEMESTER REGULAR END EXAMINATIONS, MAY-2019

Subject: **Environmental Science**

Branch: **Common to EEE, ECE, CSE & IT**

Time: 3 hours **Max. Marks: 60**

PART – A

Answer **ALL** questions of the following **5x2Marks=10 Marks**

1. Define eco system and give its classification.
2. Define pollutant? Give two examples?
3. What is sustainable development? Mention any two threats to sustainability?
4. What is ocean thermal energy?
5. Write the reaction involving in the depletion of ozone layer.

PART-B

Answer **ALL** questions of the following **5x10 Marks= 50Marks**

1. Explain different types of ecological pyramids with neat labeled diagrams.

OR

2. a) Analysis the role of food chain & food web contributes the energy flow in the universe.

   b) Explain why pyramid of energy is always upright.

3. Discuss the major environmental impacts of mineral extraction.

OR

4. a) What is meant by biodiversity? Explain various types of biodiversities in an ecosystem.

   b) How can we conserve biodiversity?

5. a) What is water pollution? Discuss various sources of water pollution.

   b) Write about drinking water quality standards.

OR

6. To any industry what are devices to be established to control air pollution at source.
7. What are major implications of enhanced global warming?

OR

8. Discuss the natural formation and occurrence of ozone in the stratosphere.
9. Discuss the following a) crazy consumerism b) role of IT in environment.

OR

10. a) Write a short note on human health.

    b) "Only if we take care of nature , nature will take care of us"

$$\begin{array}{r} 254 \\ 210 \\ 64 \\ 52 \\ \hline 580 \end{array}$$