Code No.: 50B12

MR15-2015-16 & 2016-17 Batch

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 I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2018

Subject: **APPLIED STATISTICS**

Branch: **CSE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. What are the Measures of Central Tendency
2. Write the steps of performing ANOVA
3. State two reasons why factorial experiments are often performed with each factor taken at only two levels?
4. Define Single sampling plan
5. Write the measures of Seasonal Variations.

PART-B

Answer any FIVE Questions of the following **5x10 Marks= 50Marks**

1. During 10 weeks of a certain certificate program in Computer Science, two candidates X and Y score marks as given below:

Marks scored by X	58	59	60	54	65	66	52	75	69	62
Marks scored by Y	87	89	78	71	73	84	65	66	56	46

By finding standard deviation
Who is the better scorer: X or Y?
Who is more consistent?

2. a)The following table gives the distribution of monthly wages of 500 workers in a factory:

Wages (Rs. Hundred)	15-20	20-25	25-30	30-35	35-40	40-45
No. Of workers	10	18	30	25	12	3

Compute Karl Pearson's co-efficient of skewness

b) Define i) Mean, ii) Median iii) Mode
Compute Q1 and Q3 to the following data

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	5	6	7	5	6	7	6	9	5	4

3. The following data show the birth weights of babies born, classified according to the age of mother
and order of gravid, being 3 observations per call

	15-20	20-25	25-30	30-35	35 and above
1	5.1, 5.0, 4.8	5.0,5.1,5.3	5.1,5.1,4.9	4.9,4.9,5.0	5.0,5.0,5.0
2	5.2, 5.2, 5.4	5.3,5.3,5.5	5.3,5.2,5.2	5.2,5.0,5.5	5.1,5.3,5.9
3	5.8, 5.7,5.9	6.0,5.9,6.2	5.8,5.9,5.9	5.8,5.5,5.5	5.9,5.4,5.5
4	6.0,6.0,5.9	6.2,6.5,6.0	6.0,6.1,6.0	6.0,5.8,5.5	5.8,5.6,5.5
5 and over	6.0,6.0,6.0	6.0,6.1,6.3	5.9,6.0,5.8	5.9,6.0,5.5	5.5,6.0,6.2

Test whether the age of mother and order of gravid significantly affect the birth weight

4. A tea company appoints four salesmen A, B, C and D and observes their sales in three seasons - summer, winter and monsoon. The figures (in lacks) are given in the following table:

Seasons	salesmen				Season's Total
	A	B	C	D	
Summer	36	36	21	35	128
Winter	28	29	31	32	120
Monsoon	26	28	29	29	112
Salesmen's Totals	90	93	81	96	360

a) Do the salesmen significantly differ in performance?
b) Is the significant difference between the seasons?

5. Define Completely Randomized Design, its advantages and applications
6. An experiment was planned to study the effect of sulphate of potash and super phosphate on the yield of potatoes. All the combinations of 2 levels of super phosphate [0 cent (p_0) and 5 cent (p_1) / acre] and two levels of sulphate of potash [0 cent (k_0) and 5 cent (k_1/acre] were studied in a randomized block design with 4 replications for each. The (1/70) yields [lb. per plot = (1/70) acre obtained are given in table. Analyse the data and give your conclusions.

Block	Yields (lbs per plot)			
I	(1)	k	p	kp
	23	25	22	38
II	p	(1)	k	kp
	40	26	36	38
III	(1)	k	pk	p
	29	20	30	20
IV	kp	k	p	(1)
	34	31	24	28

3. 20 random samples of 5 units drawn from each lot of wire gave the mean diameters and range as given below. Draw the Mean and Range charts.

Sub-Group	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Mean	**61.2**	**60.8**	**61.8**	**62.2**	**59.2**	**62.0**	**61.6**	**66.0**	**62.0**	**66.0**
Range	**10**	**9**	**5**	**9**	**11**	**14**	**12**	**6**	**15**	**16**

Sub-Group	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Mean	**60.8**	**65.2**	**67.8**	**66.0**	**64.0**	**64.8**	**69.6**	**59.4**	**61.0**	**61.8**
Range	**13**	**10**	**10**	**9**	**6**	**8**	**13**	**11**	**15**	**13**

8. Fit a straight line trend to the area under cultivation for the following data.

Year	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**
Area (1000 acres)	**8**	**12**	**14**	**18**	**24**	**22**

Code No.: **50452**

MR15-2015-16 & 2016-17 Batch

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2018

Subject: **DIGITAL LOGIC DESIGN**

Branch: **CSE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. Write the difference between weighted and non weighted codes with examples.
2. Define Don't Care Conditions.
3. Give Small Example For The Binary Adder And Binary Subtractors.
4. Write The Difference Between Combinational And Sequential Circuits.
5. Define Race Condition

PART-B

Answer any FIVE Questions of the following **5x10 Marks= 50Marks**

1.a) What is the binary equivalent of the decimal number 368?

b) Convert Hexadecimal numberF3A7C2 to Binary and Octal?

2.Solve

(a)Divide 01100100 by 00011001

(b) Given that (292)10 =(1204)b determine `b'.

3. a. Draw circuit diagram for the following Boolean expressions
   i. BAC+AB(AB+C) ii. ABC+(BA)'+(COD)'
   b. Reduce the following function using K-map technique and implement using NAND Gates.
   $F(A, B, C, D) = \sum m(1, 3, 5, 7, 11, 15) + d(0, 2, 4, 9)$

4. Explain the k- maps with 5 variables and take the five variable equation as an example, Simply it using the k- maps ?

5. a) How is a latch different from flip flop? Explain.
   b) Explain the working of Master Slave RS Flip flop

6. a) Design a 32k Read only memory .
   b) Design a parallel adder ?

7. Write short notes of the following
   a. Conversion of one flip flop to another flip flop
   b. Ripple Counters

8. a) Explain the about the applications of Asynchronous Sequential circuits
   b. Design Asynchronous Sequential logic with an example and show race free state assignment hazard

Code No.: **50507**

MR15-2015-16 & 2016-17 Batch

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2018

Subject: **Mathematical Foundation of Computer Science**

Branch: **CSE**

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. Define tautology and draw the truth table for example.
2. Write about transitive closer with example.
3. Explain Algebraic system with an example.
4. How many number of permutations possible ways the letters of the word" SUCCESS"?
5. Write expression for third order Recurrence relation

PART-B

Answer any FIVE Questions of the following **5x10 Marks= 50Marks**

1. a) Prove that $(p\rightarrow q)\rightarrow r$ and $p\rightarrow(q\rightarrow r)$ are not equivalent.

   b) The disjunctive normal form of a given formula is not unique explain with suitable examples.

2. a) Prove that $[(p \vee q) \wedge \sim\{\sim p \wedge (\sim q \vee \sim r)\}] \vee (\sim p \wedge \sim q) \vee (\sim p \wedge \sim r)$ is a tautology.

   b) Obtain CNF $P\wedge(P\rightarrow Q)$

3. a) Draw the Hasse Diagram for the divisibility relation on the set A in each of the following

   i) A={3,6,12,36,72} ii) A={2,3,6,12,24,36}

   b) let A={1,2,3,46,12}. On A, Define the relation R by aRb if and only if a divides b. prove that R is a Partial Order on A. Draw the Hasse digram for this relation.

4. a) Draw the Hasse diagram for the poset $(\mathcal{P}(S), \subseteq)$, where S={1,2,3,4}.

   b) Explain properties of Group with an cxamplc.

5. a) If (G, *) is an abelian group, show that $a * b^2 = a^2 * b^2$.

   b) f: x→x, f(x)= 2x+3, find the $f^{-1}(x)$

6. a) Show that the mapping f: N→N defined by $f(n)=n^2+n+1$ is one-one but not onto.

   b) Describe the homomorphism, Isomorphism.

7. A committee is to be chosen form a set of 9 women and 5 men. How many ways are there to form the committee if the committee has,

   a) 6 people, 3 women, and 3 men?

   b) Any number of people but equal numbers of women and men?

   c) 6 people and at least 3 are women?

   d) 6 people including Mr. A?

8. a) Solve the recurrence relation $a_{n+1}=4a_n$ for n>=0, given that a0=3.

   b) Determine the coefficient of x^{20} in $(x^3+x^4+x^5+\ldots)^5$

Code No: **50505** | **MR15**

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, EXAMINATIONS, DECEMBER-2018

Subject: **Object oriented programming**

Branch: **CSE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. List the characteristics of object oriented programming.
2. Discuss member functions in C++.
3. What is a CLASSPATH and elucidate it's significance.
4. Explain any two methods in thread class.
5. What is event delegation model?

PART-B

Answer any FIVE Questions of the following **5x10 Marks= 50Marks**

1. a) Explain call-by-value in C^{++} with suitable example.
   b) How to pass object as an argument to a function explain with a program.
2. a) Write a Java program to print Fibonacci series.
   b) Write a Java program to find largest of three integer
3. a) What is meant by aggregation and explain with suitable example.
   b) What is method overriding and explain with suitable example.
4. Discuss different types of inheritance in Java with an example each.
5. a) Explain the use of package with suitable example.
   b) How to set CLASS PATH in system for running a Java program.
6. a.)Illustrate with an example how interface can be extended.
   b) Design an interface called Shape with methods draw() and getArea(). Further design two classes called Circle and Rectangle that implements Shape to compute area of respective shapes. Use appropriate getter and setter methods. Write a test driver for the same.
7. a) Explain the exception handling procedure with an example.
   b) Explain thread life cycle with a neat diagram.
8. a) List and explain any three AWT components.
   b) Write an AWT program to create a login window.

Code No.: **50506** | **MR15**

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, EXAMINATIONS, DECEMBER-2018

Subject: **ALGORITHM DESIGN**

Branch: **CSE**

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

PART – A

Answer ALL questions of the following **5x2Mark=10 Marks**

1. Define (a) Feasible solutions and (b) Optimal solutions
2. Differentiate Divide and Conquer method and Greedy methods?
3. What is Reliability design?
4. Write the generic form of n-queens problem.
5. Compare NP-hard and NP-completeness?

PART-B

Answer any FIVE Questions of the following **5x10 Marks= 50Marks**

1. a) What are different asymptotic notations used? Explain.
   b) Define Union and Find operations on sets?
2. Discuss various asymptotic notations used for best case, average case and worst case analysis of algorithms?
3. a) Apply merge sort and show the array after each splitting and then merging for the following Input 30, 13, 75, 35, 85,80,35,69
   b) What is binary search? How it can be implemented by Divide and Conquer Strategy? Explain with example.
4. a) Derive the time complexity for binary search?
   b) Write the prim's algorithm to find the minimum spanning tree?
5. (a). Write All Pairs Shortest Path algorithm
   (b). Write BFS algorithm
6. a) Write the difference between BST & OBST.
   b) Explain Travelling sales person problem?
7. What is graph coloring? Present an algorithm which finds m-coloring of graph?
8. a) Explain the class of P and NP?
   b) Write a short note on Branch & bound