Code No.: 80M02

MR18 (2018-19-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 REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: **GENDER SENSITIZATION**

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

Time: 3 hours **Max. Marks: 70**

Answer ALL questions of the following **5x14 Marks= 70Marks**

1	Describe the major milestones in the history of gender equality in India.
2	a) Analyze the ways in which 'counter socialization' can help in bringing gender equality. b) Interpret the statement "Love and Acid Just Do Not Mix
3	a) Write the reasons for the preference of sons over daughters in our society. b) Predict the demographic consequences of a skewed sex ratio.
	OR
4	Show how Pinki Pramanik's case illustrates gender discrimination in the field of sports.
5	Express in your own words the message conveyed by the poem "Vantillu".
	OR
6	a) Discuss the "fact and fiction" of women's work. b) Interpret and explain the phrase "Share the Load".
7	Write the main provisions of the Sexual Harassment at Workplace (Prevention, Prohibition and Redressal) Act, 2013.
	OR
8	a) Infer the major reasons which make it difficult for women to talk about sexual harassment. b) Explain some of the most common forms of violence which women experience.
9	Analyze the role played by the Boosa Chaluvali in the flowering of Dalit literature.
	OR
10	a) Explain the contribution of Bathula Shyam Sunder to modern Telangana History. b) Show how Chityala Ailamma is related to Telangana Armed Struggle.

Code No.: 80B09 **MR18 (2018-19-Batch)**

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II B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: **PROBABILITY AND STATISTICS**

Branch: **COMMON TO CSE & IT**

Time: 3 hours **Max. Marks: 70**

Answer ALL questions of the following **5x14 Marks= 70Marks**

1. **A)** Two cards are drawn in succession from a pack of 52 cards. Find the probability that the first is a king and the second a queen if the first card is (i) replaced, (ii) not replaced.
   B) One bag contains 4 white balls and 3 black balls, and a second bag contains 3 white balls and 5 black balls. One ball is drawn from the first bag and placed unseen in the second bag. What is the probability that a ball now drawn from the second bag is black?

OR

2. A) A can hit a target 3 times in 5 shots, B can hit 2 times in 5 shots and C can hit 3 times in 4 shots. If they all fire, what is the probability that (i) two shots hit, (ii) at least two shots hit?
   B) In a certain assembly plant, three machines, B1, B2, and B3, make 30%, 45%, and 25%, respectively, of the products. It is known from past experience that 2%, 3%, and 2% of the products made by each machine, respectively, are defective. Now, suppose that a finished product is randomly selected. What is the probability that it is defective?
3. A) If X is continuous random variable given by $f(x) = \begin{cases} kx, & if\ 0 \le x < 2 \\ 2k, & if\ 2 \le x < 4 \\ -kx + 6k, & if\ 4 \le x < 6 \end{cases}$ Find k and mean of X
   B) The probability that a pen manufactured by a company will be defective is $\frac{1}{10}$. If 12 such pens are manufactured, find the probability that (i) exactly two are defective (ii) none will be defective.

OR

4. A) In a normal distribution, 31% of the items are under 45 and 8% are over 64. Find the mean and standard deviation of the distribution.
   B) If X is a Poisson variate such that $3p(x = 4) = \frac{1}{2}p(x = 2) + p(x = 0)$, find (i) mean (ii) $p(x \le 2)$
5. A population consists of 5, 10,14,18,13 and 24. Consider all possible samples of size two which can be drawn without replacement from the population.
   Determine a) The mean of the population
   b) The standard deviation of the population
   c) Mean of the sampling distribution of means
   d) The standard deviation of the sampling distribution of means.

OR

6. A) A die is tossed 960 times and if falls with 5 upwards 184 times. Is the die unbiased at a level of significance of 0.01?
   B) In a sample of 500 from a village in Telangana, 280 are found to be rice eaters and the rest wheat eaters. Test the hypothesis at 1% level of significance.

7. A) Memory capacities of 10 students were tested before and after training. State whether the training was effective or not from the following score at 5% level of significance.

Before	12	14	11	8	7	10	3	0	5	6
After	15	16	10	7	5	12	10	2	3	8

B) Two independent samples of 8 and 7 items respectively had the following values

Sample 1	11	11	13	11	15	9	12	14
Sample 2	9	11	10	13	9	8	10	-

Is the difference between the means of samples significant?

OR

8. A) A sample of 26 bulbs gives a mean life of 990 hours with a standard deviation of 20 hours. The manufacturer claims that the mean life of bulbs is 1000 hours. Is the sample not up to the standard?

B) A statistics department at one university gives qualifying exams for its graduate students. The qualifying exams consist of two parts: theory and applications. The following data summary is for student scores on these two exams in one year.

Exam	No. of samples	Mean	Standard Deviation
Theory	16	76.2	13.6
Applications	16	88.3	7.5

Assuming normality on both samples, is it reasonable to believe that variances for the scores of both subjects are equal?

9. A) Find the coefficient of correlation for the following data

Fertilizers used (tones)	15	18	20	24	30	35	40	50
Productivity (tones)	85	93	95	105	120	130	150	160

B) Find two lines of regression and coefficient of correlation for the data given below:
$n = 18,\ \sum x = 12, \sum y = 18,\ \sum x^2 = 60,\ \sum y^2 = 96,\ \sum xy = 48.$

OR

10. A) Obtain the rank correlation coefficient for the following data

X	68	64	75	50	64	80	75	40	55	64
Y	62	58	68	45	81	60	68	48	50	70

B) The lines of regression of y on x and x on y are $4x - 5y + 33 = 0$ and $20x - 9y = 107$ respectively. Evaluate (i) mean of x and y (ii) the correlation coefficient between x and y.

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II B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: **DISCRETE MATHEMATICS (COMMON TO CSE & IT)**

Time: 3 hours **Max. Marks: 70**

Answer ALL questions of the following **5x14 Marks= 70Marks**

1.a). Obtain the Principal Conjunctive normal form and Principal disjunctive normal form of A, where $A = (P \wedge Q) \vee (\sim P \wedge R)$. [10M]

b). Symbolize the following argument and check for its validity:

All men are fallible.

All kings are men.

$\therefore$ All kings are fallible [4M]

(OR)

2. a) S.T. $((P \vee Q) \wedge \sim(\sim P \wedge (\sim Q \vee \sim R))) \vee (\sim P \wedge \sim Q) \vee (\sim P \wedge \sim R)$ is a tautology by using logical equivalence(without using truth tables). [10M]

b).Convert the following statements into statement formulas

i. Some students like Math's but not Physics

ii. All triangles are Isosceles [4M]

3. a) Define the POSET and Construct the Hasse Diagram for the given POSET with respect to division p=[{2,3,6,12,15,48,120,240}; /] and check whether it is lattice or not. [9M]

. b) find out transitive closure of relation R={(1,1)(1,3)(2,2)(3,1)(3,2)}. [5M]

(OR)

4.a) Determine whether the following relation is reflexive, irreflexive, symmetric, asymmetric, antisymmetric, or transitive on the set A = {1, 2, 3, 4}

i. R = {(1, 1), (1, 2), (2, 1), (2, 2), (3, 3), (3, 4), (4, 3), (4, 4)}

ii. R = {(1, 1), (2, 2), (3, 3)} [7M]

b) Show that $(R \vee S)$ follows logically from the premises $C \vee D$, $(C \vee D) \rightarrow \sim H$, $\sim H \rightarrow (A \wedge \sim B)$, $(A \wedge \sim B) \rightarrow (R \vee S)$. [7M]

5. Verify whether the set G = {1,2,3,4,5,6,7,8,9} is a group with respect to multiplication modulo '10'.and give the reason if it is not a group.

(OR)

6. a). Define the recursive functions. Show that f(x,y)=x*y is a primitive recursion function.[6M]

b) Let f be a homomorphism from a semi group $<s_1, *_1>$ onto a semi group $< s_2, *_2 >$. If $<s_1, *_1>$ is cumutative, then conclude $< s_2, *_2 >$ is also commutative. [8M]

7.a). How many ways 16 similar apples can be distributed among 4 persons so that each person gets at least one apple.

b) A college there are 10 professors, how many ways a committee of 3 professors can be formed, so that at least one of the two professors A or B is included in the committee

(OR)

8.a). How many arrangements can be made out of the letters of the word ENGINEERING.

b). Find the coefficient of xyz^2 in the expansion of $(2x-y-z)^4$

9 Solve the recurrence relation by method of characteristic roots

$a_n+2a_{n-1}-3a_{n-2}=0=4n^2-5$ for $n\geq 2$

(OR)

10 Solve the recurrence relation $a_n-2a_{n-1}= 2^n$ for $n\geq 0$ $a_0=1$ by the method of characteristic roots.

MR18

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II B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: Computer Organization

Branch: **CSE & IT**

Time: 3 hours **Max. Marks: 70**

Answer ALL questions **5x14 = 70M**

All Questions carries equal marks

1. a) Solve the following numbers convert to decimal i) $(2EA9F)_{16}$ ii) $(2765)_8$ iii) $(10010101)_2$

b) With examples explain Logic micro operations.

(OR)

2. a) Design Binary Adder / Subtractor circuit and explain its functionality.

b) Explain the hardware implementation of Shift Microopearations.

3. a) Evaluate the following arithmetic statement:

X=A-B+C*(D*E-F)/G+H*K

i) Using a general register computer with three address instructions.

ii) Using an accumulator type computer with zero-address operation instructions.

b) List and discuss various basic addressing modes supported by the computers with example instructions.

(OR)

4. a) Evaluate the following numerical arithmetic expression into reverse polish notation and show the stack operations for evaluating the numerical result. (3+ 4) [10 (2 + 6) + 8].

b) Illustrate the flowchart for memory reference instructions and explain.

5. a) Illustrate different cache mapping techniques with examples.

b) Develop a micro program for the fetch phase of an instruction.

(OR)

6. a) Differentiate hardwired control and micro programmed control. Discuss the use of control memory.

b) What are the methods to reduce the number of Micro Instructions needed by the Control Unit? Explain in details with suitable examples.

7. a) Explain BCD adder.

b) What is an I/O processor? Explain with a neat diagram.

(OR)

8. a) Discuss floating point addition with an example. [8]

b) Explain the Daisy-chain priority interrupt with the help of block diagram. [6]

9. a) Draw a space-time diagram for a six-segment pipeline showing the time it takes to process eight tasks.

b). Differentiate between Arithmetic Pipeline and Instruction Pipeline.

(OR)

10.a) Describe a 4-segment Pipeline for floating point Addition and Subtraction of two binary numbers. [8]

b) Explain about Flynn's classification of computers for parallel processing [6]

MR18

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II B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: Operating Systems

Branch: **CSE & IT**

Time: 3 hours **Max. Marks: 70**

Answer ALL questions **5x14 = 70M**

All Questions carries equal marks

1. Describe evolution of operating system in detail.

(OR)

2. What is the need for system calls? Explain the types of system calls provided by an operating system with respect to memory management.

3. Explain FCFS, RR and SJF scheduling algorithm with illustrations.

(OR)

4. a) Explain about semaphores in detail.

b) Explain about critical section problem.

5. a) What is the need of demand paging? Explain briefly.

b) Explain in detail about segmentation on with paging technique.

(OR)

6. a) Explain in detail about paging technique.

b) Explain in detail Contiguous Memory Allocation.

7. How can deadlock be detected and recovered? Explain in detail with relevant example.

(OR)

8. A system has 3 devices D1, D2 and D3 and 3 processes P1, P2, and P3. P1 is holding D1 and waiting for D3. P2 is holding D2 and waiting for D1. P3 is holding D3 and waiting for D2.Draw resource allocation graph and wait-for graph. Is the system in deadlock state or not? Explain.

9. Explain the following with relevant diagrams:

a) Single level directory structure b) Tree-structured directory structure.

(OR)

10. a) What is a Directory? Write short note on directory implementation.

b) Explain about linked allocation method of a file.

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II B.TECH I SEMESTER REGULAR END EXAMINATIONS, NOVEMBER-2019

Subject: **Java Programming**

Branch: **COMMON TO CSE & IT**

Time: 3 hours **Max. Marks: 70**

Answer ALL questions of the following **5x14 Marks= 70Marks**

1. a) Illustrate C++ program structure with an example.
   b) Write a Java program to find the smallest number present in the given array of 'n' numbers.

(OR)

2. a) What are the different types of control structures in Java.
   b) Write a Java program for a given number to calculate the sum of cubes of its digits and display that the given number is equal to the calculated number. Read five different numbers as input.
3. a) Design a student details management system and illustrate the use of constructors and overloading methods in your program. [8M]
   b) Write a Java program using inheritance that gets the properties of a person and extends to faculty and student and display the details accordingly. [6M]

(OR)

4. a) Explain the importance of inheritance with the help of an example.
   b) Write a Java Program that reads a line of integers, and then displays each integer, and the sum of all the integers (Use StringTokenizer class of java.util).
5. a) Explain the procedure to create and import packages with an example.
   b) Define an interface. Write a Java application to implement stack operations using an interface.

(OR)

6. a) Discuss about Exception Handlers with their general forms.
   b) Write a program to implement a class Teacher contains two fields Name and qualification. Extend the class to Department, it contains Dept. No and Dept. Name. An Interface named as College it contains one field Name of the College. Using the above classes and Interface get the appropriate information and display it.
7. a) What is multitasking? Is multi threading a form of multitasking? [6M]
   b) Define an Event. Explain the role of Event handler in AWT. [8M]

(OR)

8. a) Illustrate AWT class hierarchy. [5M]
   b) Discuss any three user interface components in AWT. [9M]
9. a) Explain in detail about Flow Layout with an example.
   b) Demonstrate Border Layout in Java.

(OR)

10. a) List the limitations of AWT. Discuss briefly about Swings. [6M]
    b) Differentiate between JFrame and JApplet. [8M]