Code No.: 20M10 | MR11&12

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-2019

Subject: **PROBABILITY & STATISICS**

Branch: **CSE&ME**

Time: 3 hours **Max. Marks: 75**

Answer ANY FIVE questions of the following **5x15M= 75M**

1. a) The odds that a book will be reviewed favourably by three independent critics are 5 to 2, 4 to 3 and 3 to 4. What is the probability that of the three, reviews, a majority will be favourable. [7M]

   b) Given P(A) = 114, P(B) = 1/3, P(AUB) = 1/2, evaluate P(A/B), P(B/A), P(A∩B) and P(AlB') [8M]

2. a) Find the standard deviation for the following distribution. [7M]

X	:	8	12	16	20	24
P(x)	:	1/8	1/6	3/8	1/4	1/2

   b) The mean height of 500 students is 151cm, and the standard deviation is 15 cm. Assuring that the heights are normally distributed, find how many students heights lie between 120 and 155 cm. [8M]

3. a) Explain the terms population sample and sampling distribution. [7M]
   b) Explain the general procedure of testing a hypothesis. [8M]

4. Random sample of 400 men and 600 women were asked whether they would like to have a flyover near their residence.200 men and 325 women were in favour of the proposal. Test the hypothesis that proportions of men and women in favour of the proposal are same, at 5% level. [15M]

5. Fit a second degree polynomial for the following data. [15M]

X	1	2	3	4	5	6	7	8	9
Y	2	6	7	8	10	11	11	10	9

6. The equation of two regression lines obtained in a correlation analysis are 3x + 12y = 19, 3y +9x = 46 Find i) Coefficient of correlation ii) Mean values of x and y iii) The ratio of the coefficient of variability of x to that of y. [15M]

7. Barber A takes 15 minutes to complete a haircut. Customers arrive in his shop at an average rate of one every 30 minutes. Barber B takes 25 minutes to complete one haircut and customers arrive at his shop at an average rate of one every 50 minutes. The arrival processes are Poisson and the service times follow an exponential distribution. a)Where would you expect a bigger queue. b)Where would you require more time waiting included to complete a haircut? [15M]

8. a)Test whether the following Markov chain is ergodic and regular .

		To E1	E2	E3
From	E1	1/4	1/4	1/2
	E2	1/4	3/4	0
	E3	1/2	0	1/2

b) Find the unique fixed probability vector of the regular stochastic matrix .

$$\begin{pmatrix} 1/2 & 1/4 & 1/4 \\ 1/2 & 0 & 1/2 \\ 0 & 1 & 0 \end{pmatrix}$$

Code No.: 20434

MR12

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II B.TECH I SEMESTER SUPPLEMENTARY EXAMINATIONS, NOVEMBER-2019

Subject: **DIGITAL LOGIC DESIGN**

Branch: **CSE**

Time: 3 hours **Max. Marks: 75**

Answer ANY FIVE questions of the following **5x15M= 75M**

1. a) Construct a table for 4-3-2-1 weighted code and write 9154 using this code. [8m]

   b) Find the difference of (3250-72546) using 10's complement. [7m]

2. a) Draw the logicgates for NAND and NOR with truth table [7m]
   b) Boolean laws and their duals [8M]

3. a) Find all prime implicants and indicate which are essential through the kmap.
   b) Show that a Positive logic NAND gate is a negative logic NOR gate and vice versa.
   c) Minimize the following Boolean function to four literals (A|+C) (A| +C|) (A+B+C|D).

4. a) Draw the two-dimensional decoding structure for a 1k — word memory [12M]

   b) Explain about transition table and output map [3M]

5. a) Explain carry propagation in parallel adder with a neat diagram. [8m]
   b) Implement full subtractor using NAND gates only. [7m]

6. Explain about HDL for sequential circuits in detail?

7. Explain about the following
   a) Merger diagrams. [7M]
   b) Explain about ROM . [4m]
   c) Explain about HDL for counters . [4m]

8. a) Give the implementation procedure for an SR latch using NOR gates. [7m]

   b) Explain about Hazards in sequential circuits. [4m]

   c)Explain about Fundamental mode operation . [4m]