GATE 2024 Electronics and Communication Engineering (EC) Question Paper

1. Bode plot of 40 db/dec?

2. F= $\sum m$ (0,2,5,7,8,10,12,13,14,15). Essential prime implicants?

3. Suppose x and y are independently and identically distributed random variables uniformly distributed in the intervals (0, 1). Find the probability that (x≥y) =?

4. Base-r, $x2 - 12x+37 = 0$ has x= 8 as one of its solutions. Then r=?

5. {[2 -3 a], [3, -1 3], [1 -5 7]}. Find a

6. Z0= 50 ohm, Mod Gamma=0.6, Zmax=?

7. A white Gaussian w(t) with zero mean and power spectral density $N\_0/2$, when applied to a first- order RC low pass filter produces an output n(t). At a particular time, $t = t_1$, the variance of the random variable n(kt)=_____
    a) N0/RC b) N0/4RC c) N0/2RC d) 2N9/ RC

8. Two identical sheets A and B of dimensions 24 cm x 16 cm, operations FO_1 or FO2. In FO_1, the axis of folding remains parallel to the initial long e parallel to the initial short edge.If sheet A is folded twice using(FO, and sheet B is flooded twice into half using two distinct, the axis of folding remains. find the final ratio of A and B
    a) 11:18 b) 11:14 c) 14:11 d) 18:11

9. P,Q,R,S and T launched a new startup. Two of them are siblings. The office of the startup has just three rooms. All of them agree that the siblings should not share the same room. If S and Q are single children and the room allocations shown below are acceptable
    PR   TS   Q   PQ   RT   S
    Then which of the given options is the sibling?
    a) T and Q b) T and S   c) T and R   d) P and T

10. Five years ago the ratio of Aman's age to his father's age was 1:4 and five years from now, the ratio will be 2:5. What is his father's age when Aman was born?
    a) 35 years b) 32 years c) 30 years d) 28 years