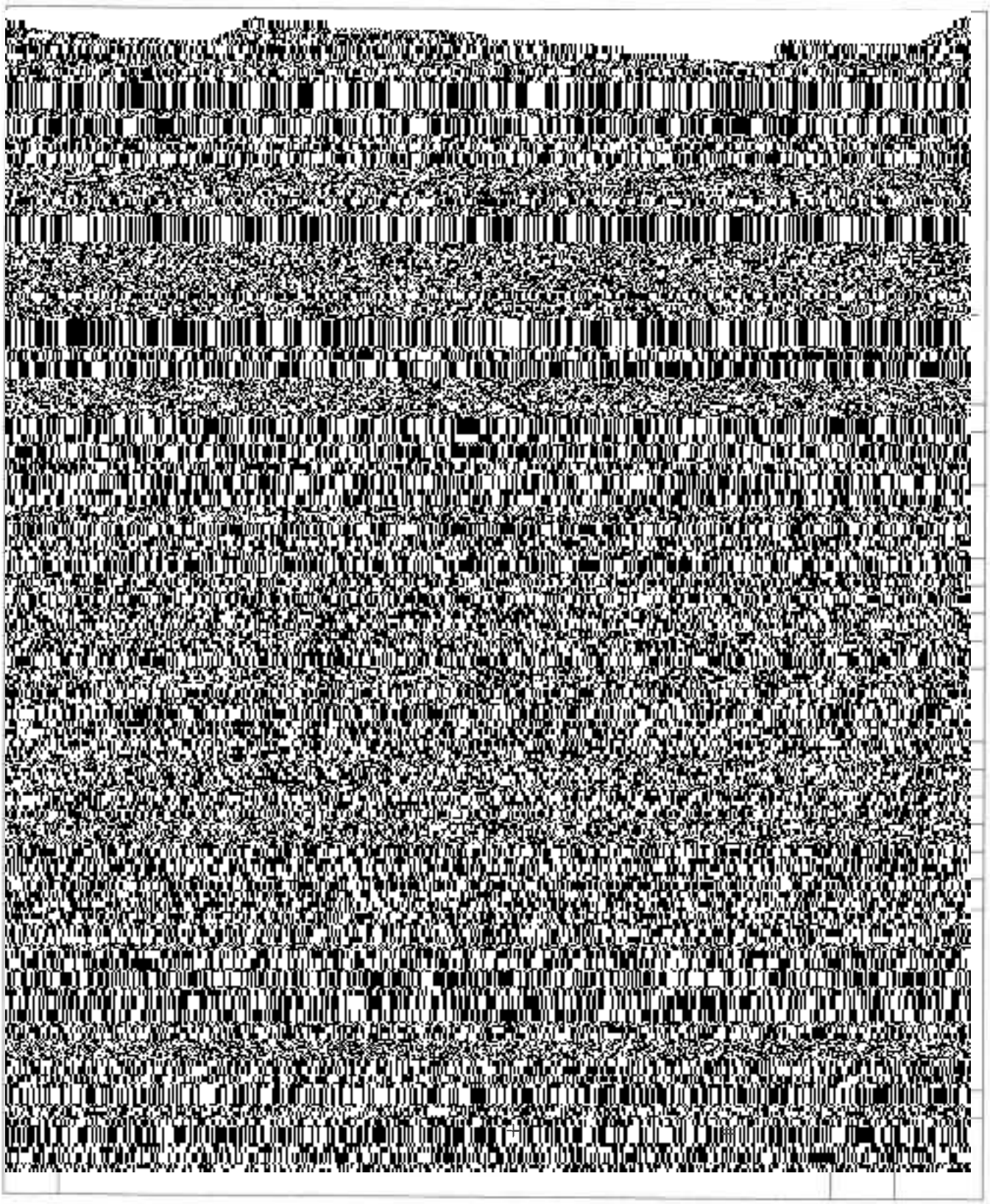
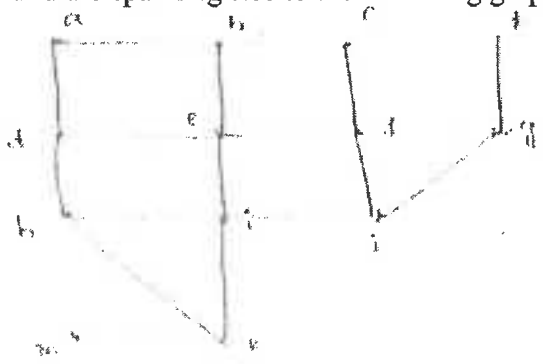


13	Determine the Eigen values and Eigen vectors of the following matrices; $A = \begin{bmatrix} 1 & 1 & 1 \\ -1 & -3 & -3 \\ 2 & 4 & 4 \end{bmatrix}$ [10M]	CO2	L3
	OR		
14	Show that the matrix satisfies Cayley Hamilton theorem and also find the value of the Matrix $A^8 - 5A^7 + 7A^6 - 3A^5 + A^4 - 5A^3 + 8A^2 - 2A + I$ Where $A = \begin{bmatrix} 2 & 1 & 1 \\ 0 & 1 & 0 \\ 1 & 1 & 2 \end{bmatrix}$ [10M]	CO2	L3
15	Solve by matrix method $\frac{d^2x}{dt^2} - 5\frac{dx}{dt} + 6x = 0\,, x(0) = 1, x'(0) = 2$ [10M]	CO3	L3
	OR		
16	A. Prove that the Eigen values of a Hermitian matrix are all real. [5M] B. Find the Eigen values and Eigen vectors of the Hermitian matrix $\begin{bmatrix} 2 & 3+4i \\ 3-4i & 2 \end{bmatrix}$ [5M]	CO3	L3
17	State and Prove Euler's formula in plane graphs. [10M]	CO4	L3
	OR		
18	Define the following with suitable examples [4+3+3]M i) Planar graph ii) Regular graph iii) Bipartite graph	CO4	L3
19	A. Write BFS algorithm. [5M] B. What is the value of postfix 723*-93/+. [5M]	CO5	L3
	OR		
20	Use BFS method to find the spanning tree to the following graph. [10M] 	CO5	L3