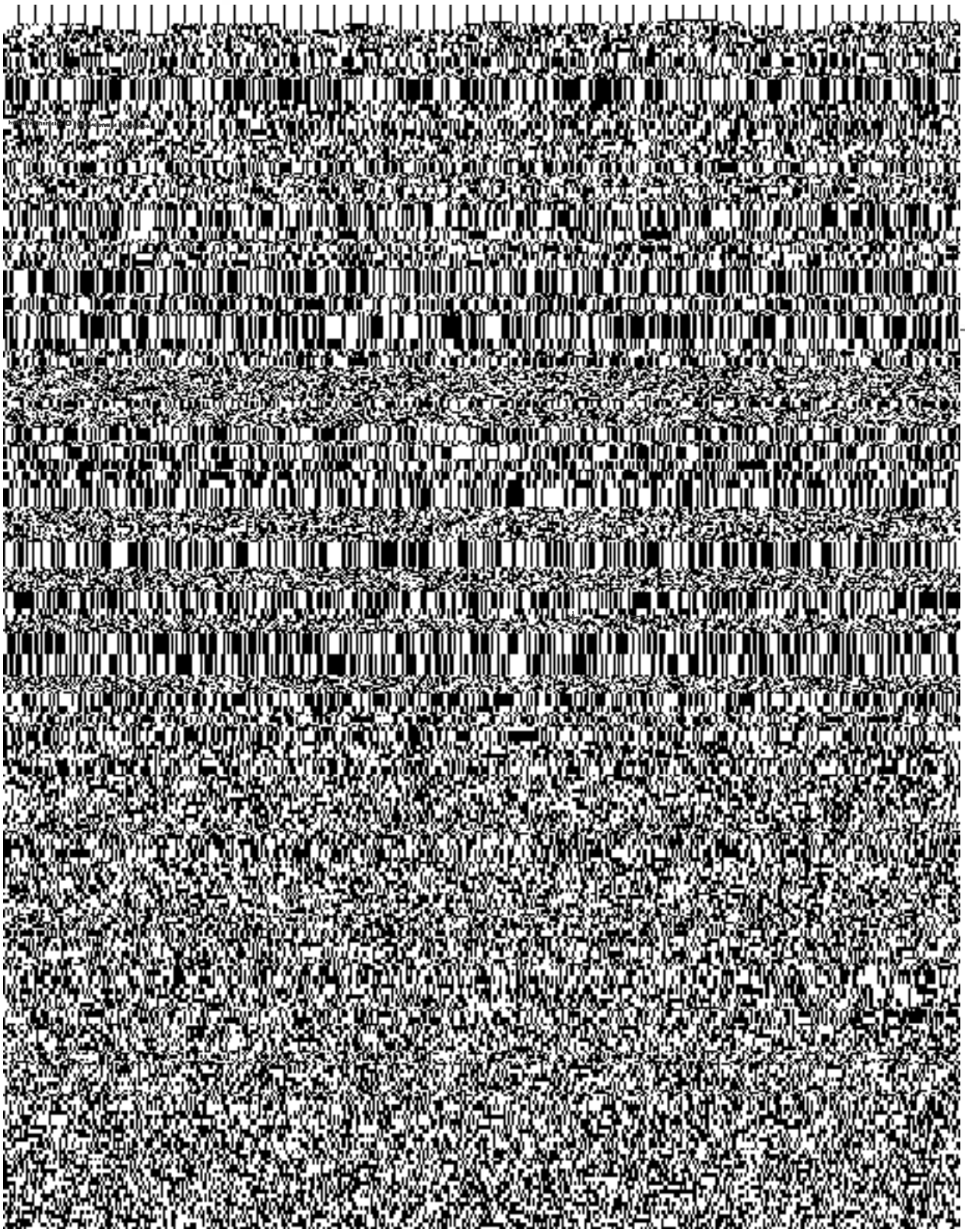

13	Solve by the method of variation of parameter $(D^2 - 2D)y = e^x \sin x$. [10M]	CO2	L3
	OR		
14	Solve $D^2(D^2 + 4)y = 96x^2 + \sin 2x - k$ [10M]	CO2	L3
15	Solve $(x+1)^2\frac{d^2y}{dx^2} - 3(x+1)\frac{dy}{dx} + 4y = x^2 + x + 1$ [10M]	CO3	L3
	OR		
16	Solve $(x^3D^3 + 3x^2D^2 + xD + 8)y = 65\cos(\log x)$ [10M]	CO3	L3
17	Prove that the vector $(x^2 - yz)i + (y^2 - zx)j + (z^2 - xy)k$ is irrotational and find its scalar potential. [10M]	CO4	L3
	OR		
18	(a) Find the values of a and b so that the surface $ax^2 - byz = (a+2)x$ will be orthogonal to the surface $4x^2y + z^2 = 4$ at the point (-1,1,2) [5M]	CO4	L3
	(b) Prove that curl $(\bar{a} \times \bar{b}) = \bar{a}$ div $\bar{b} - \bar{b}$ div $\bar{a} + (\bar{b}.\nabla)\bar{a} - (\bar{a}.\nabla)\bar{b}$ [5M]		
19	Use Greens theorem for $\int_c (3x^2 - 8y^2)dx + (4y - 6xy)$ dy where 'c' is the region bounded by x=0, y=0,and x+y=1. [10M]	CO5	L3
	OR		
20	Verify stokes theorem for $F = y^2 I + y j - 3 x k$ and S is the upper half of the sphere $x^2 + y^2 + z^2 = a^2$ and $z \geq 0$. [10M]	CO5	L4