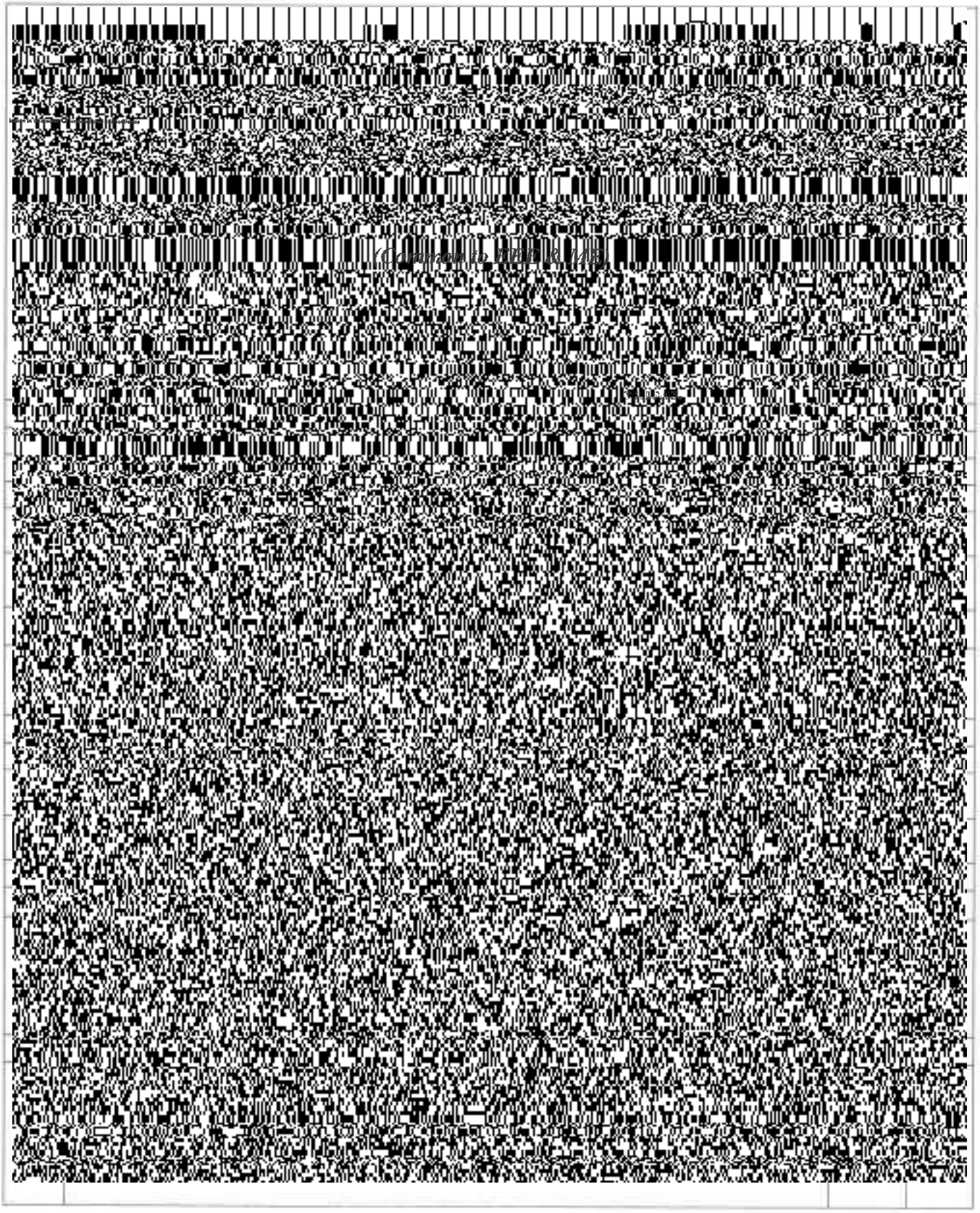

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|---|---|---|---|
| 13 | Determine the Eigen values of $A^{-1}$ where $A=\begin{bmatrix}1 & 0 & -1\\ 1 & 2 & 1\\ 2 & 2 & 3\end{bmatrix}$ [10M] | 2 | L2 |
| | OR | | |
| 14 | Determine the Eigen values and Eigen vectors of the following matrices $A=\begin{bmatrix}3 & 1 & 4\\ 0 & 2 & 6\\ 0 & 0 & 5\end{bmatrix}$. [10M] | 2 | L2 |
| 15 | Find the area of the region bounded by $y^2 = 4ax$ and $x^2 = 4ay$ [10M] | 3 | L2 |
| | OR | | |
| 16 | Evaluate $\int_0^{\frac{\pi}{2}}\int_0^{\infty}\frac{r}{(a^2+r^2)^2}drd\theta$ [10M] | 3 | L2 |
| 17 | Find c of Cauchy's mean value theorem for $f(x)=\sqrt{x}$ $and$ $g(x)=\frac{1}{\sqrt{x}}$ in [a,b] 0<a<b. [10M] | 4 | L2 |
| | OR | | |
| 18 | S.T $\beta(m,n)=\frac{\Gamma m\Gamma n}{\Gamma m+n}$ ; where m>0;n>0. [10M] | 4 | L2 |
| 19 | If $x=e^r sec\theta$ , $y=e^r tan\theta$ then prove that $JJ^I=1$ [10M] | 5 | L2 |
| | OR | | |
| 20 | Determine whether u = sinx + siny ; v = sin(x+y) are functionally dependent or not. [10M] | 5 | L2 |