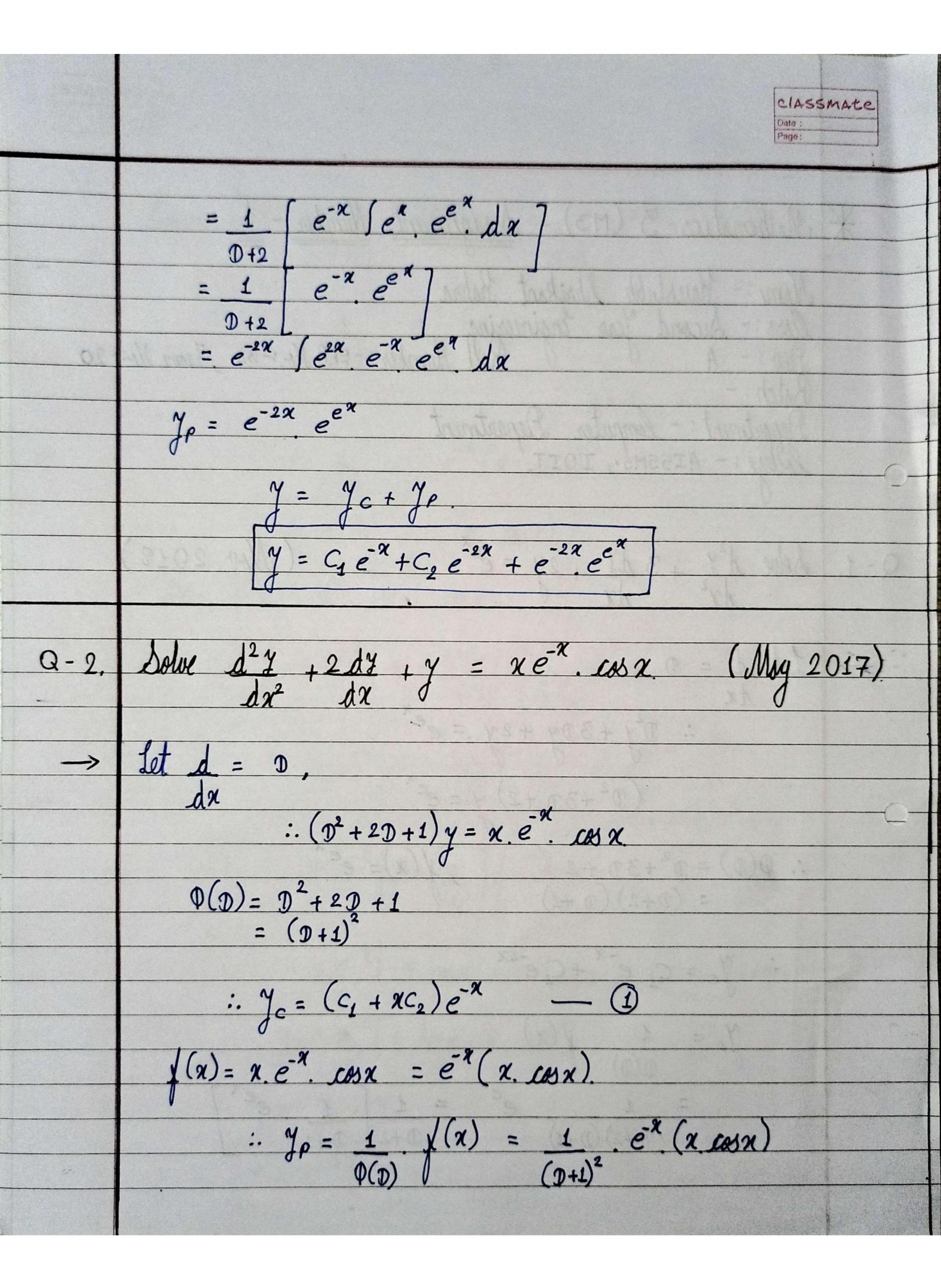
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Classmate
* Mathematics - 3 (M3) - Assignment Number -
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Div: - A Roll Number: - ERP No.:-34, Jams No:-20
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lollege: - AISSMS, IOIT.
                  D^{2}y + 3Dy + 2y = e^{e^{x}}
                        (D^2 + 3D + 2) y = e^x
     \therefore \phi(D) = D^2 + 3D + 2
               = (D+2)(D+1)
        : y_c = c_1 e^{-x} + c_2 e^{-2x}
                     (D+2) (D+1)
```



Longary with
$$\frac{1}{\Phi(0+a)} = e^{-AX}$$
, $V = \frac{1}{\Phi(0)}$, e^{AX} , $V = \frac{1}{\Phi(0)}$.

$$V = \frac{1}{(0+1)^2} = e^{-X} (x \cos x)$$

$$= \frac{1}{(0+1)^2} = e^{-X} \left[\frac{1}{2} (x \cos x) - \frac{1}{2} (x \cos x) \right]$$
Here, $\Phi(0) = 0^2$, $V = \cos x$.

$$V = e^{-X} \left[\frac{1}{2} (x \cos x) - \frac{1}{2} \cos x \right]$$

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$$= e^{-X} \left[\frac{1}{2} \cos x + 2 \cos x \right] - \frac{1}{2} \cos x$$

$$V = e^{-X} \left[2 \sin x - x \cos x \right] - \frac{1}{2} \cos x$$

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Q-5. Law
$$(p^2-2p+2)y=e^x$$
. Let x (Now, 2017)

 \Rightarrow then, $P(p)=p^2-2p+2$, $f(x)=e^x$. Let x .

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 $P($

$$V = \begin{cases} \frac{\gamma_1}{N} \cdot f(x) \cdot dx = \begin{cases} \frac{2\gamma_1}{N} \cdot \frac{2\gamma_2}{N} \cdot \frac{2\gamma_2}{N}$$

Using MVP, Jp = My, + Ny.

= $\left[\sin \alpha - \log \left(\sec \alpha + \tan \alpha\right)\right] e^{\alpha} \cdot \cos \alpha + \left[-\cos \alpha\right] e^{\alpha} \cdot \sin \alpha$ $y_p = -e^{\alpha} \cos \alpha \cdot \log (\sec \alpha + \tan \alpha)$

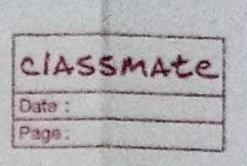
y = yc + yp

:. $y = e^{\alpha} [c_1 \cos \alpha + c_2 \sin \alpha - \cos \alpha . \log(\sec \alpha + \tan \alpha)]$.

Q-4. χ^2 , $\frac{d^2y}{d\chi^2}$ + $(-\chi)$. $\frac{dy}{d\chi}$ + $4y = \cos(\log \chi)$ + $\chi \sin(\log \chi)$ [Nov. 2018]

-> let \mathcal{D} , d, $x = e^3$, $z = \log x$. $x \cdot dy = \mathcal{D}y$, $x^2 \frac{d^2y}{dx^2} = \mathcal{D}(\mathcal{D}-1)y$

Yiven equation becomes, $D(D-1) y - Dy + 4y = \cos(z) + e^{3} \sin(z)$



$$\Phi(D) = D^2 - 2D + 4 , f(z) = \cos z + e^3 \cdot \sin z \\
\to 1 \pm \sqrt{3} i$$

:.
$$y_c = e^3 (c_1 \cos \sqrt{3} + c_2 \sin \sqrt{3} + c_3)$$

$$y_p = \frac{1}{\phi(\mathfrak{D})} \cdot f(\mathfrak{Z}) = \frac{1}{(\mathfrak{D}^2 - 2\mathfrak{D} + 4)} \left[\cos \mathfrak{Z} + e^3 \sin \mathfrak{Z} \right]$$

$$= 1 \qquad \text{LOS}_{7} + 1 \qquad e^{3} \sin_{7}.$$

$$(9^{2}-29+4) \qquad (9^{2}-29+4) \qquad e^{3} \sin_{7}.$$

$$A=1, D^2=-1$$
 $A=1, V=Sin_2, D\to D+1$

$$= -\frac{1}{20-3} \cdot \cos z + e^3 \left[\frac{1}{0^2+3} \cdot \sin z \right]$$

$$= -\frac{(20+3)}{(20-4)} \cdot \cos z + e^3 \left[\frac{1}{0^2+3} \cdot \sin z \right]$$

$$A = 1, D^2 \rightarrow -1$$
 $A = 1, D^2 \rightarrow -1$

$$= (2D + 3) \cos 3 + e^{3} \sin 3$$

$$= 13$$

:.
$$y_p = 3 \cos(\log x) - 2 \sin(\log x)$$
 + $x \sin(\log x)$ [: $z = \log x$

$$y = x[C_1 cos(\sqrt{3} log x) + C_2 sin(\sqrt{3} log x)] + x sin log x + 3 cos(log x) - 2 cos (13 log x) - 2 cos (15 log x) - 2 cos ($$

