$\Rightarrow$ Collecting terms

$$\left.\begin{array}{lll} \cos x: & -C-4D+4C \equiv & 3C-4D=5 \\ \sin x: & -D+4C+4D \equiv & 3D+4C=0 \end{array}\right\} \Rightarrow \begin{array}{l} C=3/5 \\ D=-4/5 \end{array}$$

4

$$\left.\begin{array}{ll} x: & 4A=4 \\ 1: & -4A+4B=0 \end{array}\right\} \Rightarrow A=B=1$$

2

$\therefore y_p = x+1+\frac{3}{5}\cos x - \frac{4}{5}\sin x$

So $\boxed{y = e^{2x}(C_1 x + C_2) + x + 1 + \frac{3}{5}\cos x - \frac{4}{5}\sin x}$ 1

$\Rightarrow$ the gen. Soln

$y' = 2e^{2x}(C_1 x + C_2) + e^{2x}C_1 + 1 - \frac{3}{5}\sin x - \frac{4}{5}\cos x$ 1

Now

$$\left.\begin{array}{l} y(0) = C_2 + 1 + 3/5 = 1 \\ y'(0) = 2C_2 + C_1 + 1 - \frac{4}{5} = -1 \end{array}\right\} \begin{array}{l} C_2 = -3/5 \\ C_1 = -2C_2 - 4/5 = 0 \end{array}$$

Soln of I.V.P 4

$$\boxed{y = -\frac{3}{5}e^{2x} + x + 1 + \frac{3}{5}\cos x - \frac{4}{5}\sin x}$$

(18)