Answer Any two questions

Marks - 5

(1) Solve: $[D^2 - 6D + 9] y = \sin x$

Or

Solve: $[D^2 - D] y = e^{2x}$

Marks - 5

(2) Solve the following equation by the method of undetermined cofficients:

$$y_2 + 2y_1 + 2y = e^{2x}$$

Or

Solve: $\dfrac{dy}{dx} + \dfrac{1 - 2x}{x^2} y = 1$

Assignment

2nd sem

Marks - 10

Answer any two questions -

(i) Find the value of $i^{3/4}$.

(ii) Show that the following system of equations has infinite number of solutions:

$$x + 4y + 2z = 1$$
$$2x + 7y + 5z = 1$$
$$4x + 14y + 10z = 2$$

(iii) Show that the vectors $(-1, 2, 1)$; $(3, 0, -1)$, $(-5, 4, 3)$ are linearly dependent.

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