Class test 3; CH 61015

Solve the following problem completely using **Green's function method**:

$$\frac{d^2u}{dx^2} = x$$

At x=0; $\frac{du}{dx} + 2u = 1$; at x=1, $\frac{du}{dx} + 3u = 4$

(i) Obtain the governing equation & BCs of causal Green's function. (4)

(ii) Obtain the solution of Causal Green's function. (4)

(iii) State (do not derive) if the operator is self-adjoint. (2)

(iv) Obtain the solution for u(x) completely. (10)