

## Math 301-123      Quiz 5 A

Name:.....Sec#:.....ID#:.....Ser#:.....

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**Q:1** (5 points) Solve the problem  $\frac{\partial^2 u}{\partial x^2} + \sin 2\pi x + \sin \omega t = \frac{\partial^2 u}{\partial t^2}$ ,  $0 < x < 1$ ,  $t > 0$

$$u(0, t) = 0, u(1, t) = 0, t > 0$$

$$u(x, 0) = 0, u_t(x, 0) = 0, 0 < x < 1$$

**Q:2** Solve the problem  $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0, 0 < x < \pi, y > 0$

$$u(0, y) = 0, u(\pi, y) = e^{-y}, y > 0$$

$$u_y(x, 0) = 0, 0 < x < \pi$$