

Assignment-17

* Required

1. Email address *

2. Name *

3. Registration *

4. Institute *

5. Problem -1 Solve the PDE *

5 points

$\frac{\partial^2 z}{\partial x^2} = \frac{\partial u}{\partial y} = 0$ which satisfy the boundary conditions $z = 0$ when $x = 0$ and π ; $z = \sin 3x$ when $y = 0$ and $0 < x < \pi$.

Ans. $z(x, y) = \sin 3xe^{-9y}$.

Files submitted:

6. Problem -2 Solve the PDE *

5 points

$2 \frac{\partial^2 u}{\partial x^2} = \frac{\partial u}{\partial t} = 0$ which satisfy the boundary conditions $0 < x < 3$, $u(0,t) = u(3,t) = 0$ and $u(x,0) = 5 \sin 4\pi x - 3 \sin 8\pi x + 2 \sin 10\pi x$.

Ans. $u(x,t) = 5e^{-32\pi^2 t} \sin 4\pi x - 3e^{-128\pi^2 t} \sin 8\pi x + 2e^{-200\pi^2 t} \sin 10\pi x$.

Files submitted:

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