

By. Er. Dharmendra Sir

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DPM CLASSES

6th to 10th (Math's & Science), 11th & 12th (Physics, Chemistry, Math's)

TEST - PAPER (CBSE/NCERT)

DIFFERENTIAL EQUATIONS

SESSION -2024-25

CLASS - 12th

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Time : 1 hr : Differential Equations :- mm.

Q. 1. Solve the differential equation :

$$\frac{dy}{dx} = 1 + x + y^2 + xy^2, \text{ where } x=0 \text{ and } y=0$$

Q. 2. Solve : $x^2 \frac{dy}{dx} = x^2 + xy + y^2$ 

Q. 3. Find the equation of a curve passing through origin and satisfying the differential equation.

$$(1+x^2) \frac{dy}{dx} + 2xy = 4x^2$$

Q. 4. Find the general solution of the differential equation $(1+y^2) + (x - e^{\tan^{-1}y}) \frac{dy}{dx} = 0$

Q. 5. Find the general solution of :

$$y^2 dx + (x^2 - xy + y^2) dy = 0$$

Q. 6. Solve $2(y+3) - xy \frac{dy}{dx} = 0$ given that $y(1) = -2$.

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Q.7. Solve the differential equation

$$dy = \cos x (2 - y \sec x) dx$$

given that $y=2$ when $x = \frac{\pi}{2}$ 

Q.8. Solve the differential equation

$$(1+y^2) \tan^{-1} x dx + 2y (1+x^2) dy = 0$$

Q.9. Find the differential equation of system of concentric circles with centre $(1,2)$

Q.10. Find the general solution of

$$(1 + \tan y) (dx - dy) + 2x dy = 0$$



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