

ISC COACHING CENTRE



**EXPERT TUITION FROM
EXPERIENCED TEACHERS**

Class IV-X *English, Maths,
Science & Social Science*
Class XI-XII

**English, Maths, Accountancy, Economics,
I.p, C.S, Business Studies, History,
Pol. Science, History, Geography**

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|-----------------------|-------------------|-----------------|
| - Class Notes | - Pre-Board Paper | - Board Papers |
| - Important Questions | - Assignmenta | - Mcq Questions |
| - Test papers | - Sample papers | - Short Notes |

**Branch 1:-
C-20, Bunglow Road,
Adarsh Nagar**

**Branch 2:-
ISC, Near Labour
Chowk, Adarsh Nagar**

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ISC COACHING CENTER
CLASS XIIth MATH
Differentiation.

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Q1 $\sqrt{x} \sin x$

Q2 $\cot^3 x^2$

Q3 $\frac{5x}{\sqrt[3]{1-x^2}}$

Q4 $\sin \sqrt{\sin \sqrt{x}}$

Q5 $\log(\log x)$

Q6 $\frac{1}{\log(\cos x)}$

Q7 $\sqrt{e^{\sqrt{x}}}$

Q8 $\sqrt{\log(\sin(\frac{x^2}{3} - 1))}$

Q9 $\log \log \log x^3$

Q10 $\log(\sec \frac{x}{2} + \tan \frac{x}{2})$

Q11 $\log \sqrt{\frac{1 + \cos^2 x}{1 - e^{2x}}}$

Q12

$x e^{\sqrt{\sin x}}$

Q13

$\sqrt{\frac{1+e^x}{1-e^x}}$

Q14

$\log(x + \sqrt{1+x^2})$

Inverse

Q1

$\sin(\tan^{-1} x)$

Q2

$e^{\tan^{-1} \sqrt{x}}$

Q3

$(\cot^{-1} x^2)^3$

Q4

$\log \sin^{-1} x^4$

Q5

$\tan^{-1}\left(\frac{\cos x - \sin x}{\cos x + \sin x}\right)$

Q6

$\tan^{-1}\left(\frac{\cos x}{1 + \sin x}\right)$

$$Q7. \tan^{-1} \sqrt{\frac{1+\sin x}{1-\sin x}}$$

$$Q8. \cos^{-1} \sqrt{\frac{1+\cos x}{2}}$$

$$Q9. \cot^{-1} \left[\frac{\sqrt{1+\sin x} + \sqrt{1-\sin x}}{\sqrt{1+\sin x} - \sqrt{1-\sin x}} \right]$$

$$Q10. \cot^{-1} \left[\frac{1-x}{1+x} \right]$$

$$Q11. \tan^{-1} \left[\frac{\sqrt{1+x^2}-1}{x} \right]$$

$$Q12. \sin^{-1} [x\sqrt{1-x} - \sqrt{x}\sqrt{1-x^2}]$$

$$Q13. y = \sin^{-1} \left[\frac{\sqrt{1+x} - \sqrt{1-x}}{2} \right]$$

$$Q14. y = \sin^{-1} \left[\frac{5x+12\sqrt{1-x^2}}{13} \right]$$

$$Q15. \cot^{-1} \left[\sqrt{\frac{1+\cos 3x}{1-\cos 3x}} \right]$$

$$Q16. \tan^{-1} \left[\frac{5x}{1-6x^2} \right]$$

$$Q17. \sin^{-1} \left[\frac{2^{x+1}}{1+4^x} \right]$$

$$Q18. \sin^{-1} [2ax\sqrt{1-a^2x^2}]$$

$$Q19. \sin \left[2 \tan^{-1} \left(\sqrt{\frac{1-x}{1+x}} \right) \right]$$

$$Q20. \tan^{-1} \left[\frac{\sqrt{x-x}}{1+x^{3/2}} \right]$$

Implicit function

$$Q1. x^3 + y^3 = 3axy$$

$$Q2. cx^2 + 2axy + by^2 = 0$$

$$Q3. \sqrt{x} + \sqrt{y} = \sqrt{a}$$

$$Q4. xy = c^2$$

$$Q5. \cot(xy) + xy = y$$

$$Q6. x^n + y^n = a^n$$

$$Q7. x^2 + y^2 = \log(xy)$$

$$Q8. \log \sqrt{x^2 + y^2} = \tan^{-1} \frac{y}{x}$$

$$Q9. xy^2 - x^2y - 5 = 0$$

Logarithm

$$Q1 \quad y = (2x+3)^{3x-5}$$

$$Q2 \quad y = (\sin x)^x$$

$$Q3 \quad y = (\log x)^x$$

$$Q4 \quad y = x^{\sin x}$$

$$Q5 \quad y = x^{\sqrt{x}}$$

$$Q6 \quad (\sin x)^{\cos x}$$

$$Q7 \quad (\log x)^{\log x}$$

$$Q8 \quad (\cos x)^{\sin x}$$

$$Q9 \quad (\sin^{-1} x)^x$$

$$Q10 \quad \frac{x^5 \sqrt{x+4}}{(2x+3)^2}$$

$$Q11 \quad \sin x \sin 3x \sin 4x$$

$$Q12 \quad \frac{x^3 \sin x}{e^x}$$

$$Q13 \quad \frac{(x+1)^2 \sqrt{x-1}}{(x+4)^3 e^x}$$

$$Q14 \quad (1+x)(1+x^2)(1+x^4)(1+x^6)$$

$$Q15 \quad (\tan x)^y = (\tan y)^x$$

$$Q16 \quad x^{\log x} + (\log x)^x$$

$$Q17 \quad (x^2 + y^2)^2 = x(y)$$

$$Q18 \quad e^{\sin x} + (\tan x)^x$$

$$Q19 \quad (\sin x)^x + \sin^{-1} \sqrt{x}$$

$$Q20 \quad x^{\cos x} + (\sin x)^x$$