

Name:		Roll No.		Subject	Math
Test Type	Only MCQs	Class	12 th	Date	
Chapter	03 Integration	Unit	03	Time	

Q. No. 1 Tick the best option

1. Differential of "x" is denoted by.

- (a) dy (b) dx (c) dx' (d) $\frac{dy}{dx}$

2. $\int x^n dx$ for $n \neq -1$

- (a) $\frac{x^{n+1}}{n} + c$ (b) $\frac{x^{n-1}}{n-1} + c$ (c) $nx^{n-1} + c$ (d) $\frac{x^{n+1}}{n+1} + c$

3. If $y = \ln x$, then dy is equal to.

- (a) $\frac{1}{x}$ (b) $\frac{1}{x} \cdot \frac{1}{\ln a}$ (c) $\frac{1}{x} dx$ (d) $x dx$

4. If $f(x) = x^2$, when $x = 2$ and $dx = 0.01$ then $dy =$

- (a) 0.04 (b) 0.02 (c) 0.01 (d) None

5. $\int \ln x dx =$

- (a) $x \ln x - x$ (b) $x \log_a x + x$ (c) $\frac{1}{x} \ln x$ (d) $x - x \ln x$

6. $\int (3x^2 + 2x) dx =$

- (a) $6x + 1$ (b) $\frac{x^3}{3} + \frac{3x^2}{2} + c$ (c) $6x + 2 + c$ (d) $x^3 + x^2 + c$

7. $\int \sec 5x \tan 5x dx =$

- (a) $5 \sec 5x$ (b) $\frac{1}{5} \sec 5x + c$ (c) $\frac{\sec x}{5} + c$ (d) $\frac{\tan 5x}{5} + c$

8. $\int \sin x dx =$

- (a) $\cos x + c$ (b) $-\cos x + c$ (c) $\tan x + c$ (d) $\operatorname{Cosec} x + c$

9. $\int \sec^2 x dx =$

- (a) $\tan x + c$ (b) $\cot x + c$ (c) $\cos x + c$ (d) $-\operatorname{Cosec} x + c$

10. $\int x^{-2} dx =$

- (a) x^{-1} (b) $-\frac{1}{x}$ (c) $-\frac{1}{x^3}$ (d) $-\frac{1}{x^2}$

11. $\int \cos x \left(\frac{\ln \sin x}{\sin x} \right) dx =$

- (a) $\ln(\sin x)^2 + c$ (b) $\frac{1}{2} \ln(\sin x)^2 + c$ (c) $\ln(\sin x)^2 + c$ (d) $\frac{1}{2} [\ln(\sin x)]^2 + c$

12. $\int x^{-1} dx =$

- (a) $\frac{1}{x^2}$ (b) $\ln|x| + c$ (c) $\ln(\ln x) + c$ (d) $\frac{x^0}{0}$

13. $\int e^x dx =$

- (a) $e^x + c$ (b) $e^{-x} + c$ (c) $a^x + c$ (d) $\ln|x| + c$

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14. $\int e^{-3x} dx =$

- (a) $e^{-3x} + c$ (b) $e^{3x} + c$ (c) $\frac{e^{-3x}}{-3} + c$ (d) $\frac{e^{-3x}}{3} + c$

15. $\int xe^x dx =$

- (a) $xe^x + e^x + c$ (b) $e^x + x + c$ (c) $xe^x - e^x + c$ (d) $xe^x + c$

16. $\int \frac{\sec^2 x}{\tan x} dx =$

- (a) $\ln(\tan x) + c$ (b) $\ln(\cot x) + c$ (c) $\cot x + c$ (d) $-\tan x + c$

17. $\int \frac{\operatorname{Cosec}^2 x}{\cot x} dx =$

- (a) $-\cot x + c$ (b) $\ln|\cot x| + c$ (c) $-\ln(\cot x) + c$ (d) None

18. $\int (e^x + \sin x) dx =$

- (a) $e^x + \cos x + c$ (b) $e^x - \cos x + c$ (c) $e^x + \sin x + c$ (d) $e^x + \operatorname{Cosec} x + c$

19. $\int (1/x - \frac{\sin 2x}{\cos^2 x}) dx =$

- (a) $\ln(x \sin x) + c$ (b) $\ln(x \sin^2 x) + c$ (c) $\ln(x \cos^2 x) + c$ (d) $\ln(e^x \cdot \cos^2 x) + c$

20. $\int e^{\sin x} \cos x dx =$

- (a) $\ln(\sin x) + c$ (b) $\ln(\cos x) + c$ (c) $e^{\cos x} + c$ (d) $e^{\sin x} + c$

21. $\int \frac{e^{\tan^{-1} x}}{1+x^2} dx =$

- (a) $e^{\tan x} + c$ (b) $e^{\sec x} + c$ (c) $e^{\cot^{-1} x} + c$ (d) $e^{\tan^{-1} x} + c$

22. $\int e^{\sinh x} \cosh x dx =$

- (a) $e^{\cosh x} + c$ (b) $e^{\operatorname{Cosech} x} + c$ (c) $e^{\operatorname{Sech} x} + c$ (d) $e^{\sinh x} + c$

23. $\int a^x dx =$

- (a) $a^x \ln a + c$ (b) $\frac{a^x}{\ln a} + c$ (c) $\frac{1}{a^x \ln a}$ (d) $a^x \ln a + c$

24. $\int 2^x (\ln 2) dx =$

- (a) $\frac{2^x}{\ln 2} + c$ (b) $\frac{\ln 2}{2^x} + c$ (c) $\frac{1}{2^x \ln 2}$ (d) $2^x + c$

25. $\int \tan^2 x dx =$

- (a) $\sec^2 x + c$ (b) $\sec^2 x + x + c$ (c) $\tan x - x + c$ (d) $\tan x + x + c$

26. $\int \frac{1}{1+x^2} dx =$

- (a) $\cot^{-1} x$ (b) $\cos^{-1} x$ (c) $\tan^{-1} x$ (d) $\sin^{-1} x + c$

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27. $\int \sqrt{3-2\theta} d\theta =$
- (a) $+\frac{1}{2}(3-2\theta)^{3/2} + c$ (b) $\frac{1}{2}(3-2\theta)^{1/2} + c$
- (c) $-\frac{1}{3}(3-2\theta)^{3/2} + c$ (d) $-\frac{1}{3}(3-2\theta)^{1/2} + c$
28. $\int e^x \frac{(1-x)}{x^2} dx =$
- (a) $\frac{e^x}{x} + c$ (b) $-\frac{e^x}{x} + c$ (c) $\frac{e^x}{x^2} + c$ (d) $e^x + c$
29. $\int e^x \left[\operatorname{Cosec}^{-1} x - \frac{1}{x\sqrt{x^2-1}} \right] dx =$
- (a) $e^x \operatorname{Cosec}^{-1} x + c$ (b) $\frac{\operatorname{Cosec}^{-1}}{e^{+x}} + c$ (c) $\operatorname{Cosec}^{-1} x + c$ (d) $\frac{e^{+x}}{\operatorname{Cosec}^{-1} x} + c$
30. $\frac{d}{d\theta} \int f(\theta) d\theta =$
- (a) $\frac{1}{f(\theta)}$ (b) $f'(\theta)$ (c) $f(\theta)$ (d) $f''(\theta)$
31. $\int \frac{\tan(\ln x)}{x} dx$
- (a) $\ln|\cos(\ln x)| + c$ (b) $\ln|\cos x| + c$ (c) $\ln|\sin(\ln x)| + c$ (d) $\ln|\sec(\ln x)| + c$
32. The solution of differential equation $\frac{dy}{dx} = \cos x$ is
- (a) $y = \tan x + c$ (b) $y = \sec x + c$ (c) $y = \sin x + c$ (d) $y = \cos x + c$
33. The solution of differential equation which contains a single value of constant is called .
- (a) General solution (b) Particular solution (c) Solution of equation (d) None
34. $\int_{-\pi}^{\pi} \sin x dx$
- (a) 0 (b) 1 (c) 2 (d) π
35. $\int_{-\pi}^{\pi} \cos x dx =$
- (a) 1 (b) ∞ (c) 0 (d) π
36. $\int_0^3 \frac{dx}{x^2+9} =$
- (a) $\frac{\pi}{4}$ (b) $\frac{\pi}{12}$ (c) $\frac{\pi}{16}$ (d) $\frac{\pi}{6}$
37. If $\int_{-2}^1 f(x) dx = 5$, $\int_1^3 f(x) dx = 3$ then $\int_{-2}^3 f(x) dx$
- (a) 4 (b) 6 (c) 8 (d) None

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38. $\int e^x [f(x) + f'(x)] dx =$
 (a) $e^x f'(x) + c$ (b) $e^x f(x) + c$ (c) $e^{ax} f(x) + c$ (d) None
39. $\int e^{-x} (\cos x - \sin x) dx =$
 (a) $e^{-x} \sin x + c$ (b) $e^{-x} \cos x + c$ (c) $e^{-x} (-\sin x) + c$ (d) None
40. $\int e^x \left[\frac{1}{1+x} - \frac{1}{(1+x)^2} \right] dx =$
 (a) $e^x (1+x) + c$ (b) $e^x \left(\frac{1}{(1+x)^2} \right) + c$ (c) $\frac{e^x}{1+x} + c$ (d) $\frac{1}{1+x} + c$
41. $\int_a^x 3t^2 dt =$
 (a) $a^3 - x^3$ (b) $x^3 - a^3$ (c) $x^3 + a^3$ (d) $6x - 6a$
42. $\int_a^b f(x) dx =$
 (a) $\int_{-b}^a f(x) dx =$ (b) $-\int_a^b f(x) dx =$ (c) $\int_a^b f(z) dz =$ (d) both b & c
43. The area bounded by cos function from.
 (a) $x = -\frac{\pi}{2}$ to $x = \frac{\pi}{2}$ is
 (a) 1 (b) 0 (c) -2 (d) 2
44. The solution of differential equation $\frac{dy}{dx} = e^x (1 + y^2)$ is
 (a) $\sin(e^x + c)$ (b) $\tan(e^x + c)$ (c) $\cos(e^x + c)$ (d) None
45. The conditions through which the arbitrary constants involving in the differential equation can be determined is called.
 (a) Final value condition (b) Initial value conditions
 (c) n-initial value conditions (d) none
46. The are between x-axis and curve.
 (a) $y = 4x - x^2$ is.
 (a) $\frac{32}{3}$ (b) 32 (c) $\frac{23}{3}$ (d) 25
47. The solution of differential equations $x \frac{dy}{dx} = 1 + y$ is
 (a) $y = cx + 1$ (b) $y = cx - 1$ (c) $y = x - 1$ (d) None
48. $\int_p^p f(z) dz =$
 (a) 1 (b) 0 (c) -1 (d) a

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49. $\int_{-\infty}^{\infty} \frac{dx}{1+x^2} =$

(a) $\frac{\pi}{6}$

(b) $\frac{\pi}{4}$

(c) π

(d) $\frac{\pi}{3}$

50. $\int e^{-x} dx =$

(a) $e^{-x} + c$

(b) $-e^{-x} + c$

(c) $e^x + c$

(d) None



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