

Name:		Roll No.		Subject	Math
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Q. No. 1 Tick the best option

- The term function was introduced by.
(a) Liebniz (b) Euler (c) Newton (d) None
- Let $f: x \rightarrow x^2 + 1$ is a function, then x is called.
(a) Domain of f (b) Range of f
(c) Dependent variable (d) None
- If f is an even function and g is an odd function then the function fog is.
(a) An even function (b) an odd function
(c) neither even nor odd (d) a periodic function
- If f is an odd function & g is an even function then fog is an.
(a) even function (b) odd function
(c) neither even nor odd (d) None
- If f & g are odd function then the function fog is an.
(a) even function (b) odd function
(c) neither even nor odd (d) Periodic
- $x^2 + y^2 = 16$ is.
(a) Function (b) Not function (c) Ellipse (d) Line
- If $f(x) = x \sec x$, then $f(0) =$
(a) -1 (b) 0 (c) 1 (d) ∞
- If $f: x \rightarrow \sec x$ is a function, then $f(\pi) =$
(a) -1 (b) $-\frac{1}{2}$ (c) $\frac{1}{2}$ (d) 1
- $f(x) = e^x$ is called.
(a) trigonometric function (b) exponential function
(c) logarithmic function (d) algebraic function
- The function $f(x) = ax + b$ is an identity function if.
(a) $a = 0, b = 1$ (b) $a = 1, b = 0$ (c) $a = 1, b = 1$ (d) $a = 0, b = 0$
- The function $f: x \rightarrow 100$ is.
(a) constant function (b) cubic function (c) quadratic function (d) Identity function
- The linear function $f(x) = ax + b$ is constant function if.
(a) $a \neq 0, b = 1$ (b) $a = 1, b = 0$ (c) $a = 1, b = 1$ (d) $a = 0$
- $\sinh x =$
(a) $\frac{e^x + e^{-x}}{2}$ (b) $\frac{e^x - e^{-x}}{2}$ (c) $\frac{e^x - e^{-x}}{e^x + e^{-x}}$ (d) None
- $\cosh x =$
(a) $\frac{e^x + e^{-x}}{2}$ (b) $\frac{e^x - e^{-x}}{2}$ (c) $\frac{e^x + e^{-x}}{e^x - e^{-x}}$ (d) $\frac{e^x - e^{-x}}{e^x + e^{-x}}$
- $\operatorname{cosech} x =$
(a) $\frac{2}{e^x + e^{-x}}$ (b) $\frac{1}{e^x + e^{-x}}$ (c) $\frac{2}{e^x - e^{-x}}$ (d) $\frac{1}{e^x - e^{-x}}$
- $\sinh^{-1} x =$
(a) $\ln(x - \sqrt{x^2 + 1})$ (b) $\ln\left(\frac{x-1}{x+1}\right)$ (c) $\ln(x + \sqrt{x^2 + 1})$ (d) $\ln\left(\frac{x+1}{x-1}\right)$

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17. $\cosh^{-1}x =$
 (a) $\ln(x + \sqrt{x^2 + 1})$ (b) $\ln(x + \sqrt{x^2 - 1})$ (c) $\frac{1}{2} \ln\left(\frac{1+x}{1-x}\right)$ (d) $\frac{1}{2} \ln\left(\frac{x+1}{x-1}\right)$
18. $\tanh^{-1}x =$
 (a) $\ln(x + \sqrt{x^2 + 1})$ (b) $\ln(x - \sqrt{x^2 - 1})$ (c) $\frac{1}{2} \ln\left(\frac{1+x}{1-x}\right)$ (d) $\frac{1}{2} \ln\left(\frac{x+1}{x-1}\right)$
19. Equation $x = 9 \cos t$ and $y = 9 \sin t$ represents the equations of.
 (a) Line (b) Circle (c) Parabola (d) Hyperbola
20. The function $f(x) = \sin x + \cos x$ is.
 (a) an even function (b) an odd function
 (c) Neither even nor odd (d) Implicit function
21. $f(x) = \sin x \cos x$ is.
 (a) Odd function (b) Quadratic function (c) Even function (d) Linear function
22. If $f(x) = \sqrt{x+9}$ then $f(x^2 + 3) =$
 (a) $x^2 + 12$ (b) $\sqrt{x^2 - 12}$ (c) $\sqrt{x^2 + 9}$ (d) $\sqrt{x^2 + 12}$
23. If P is the perimeter of a square and A is its area, then $P =$.
 (a) $\sqrt{A}$ (b) $2\sqrt{A}$ (c) $2\sqrt{A}$ (d) $4\sqrt{A}$
24. The volume of a cube whose length of side is "4".
 (a) 4 cubic units (b) 16 cubic units (c) 3 cubic units (d) 64 cubic units
25. If $f(x) = \sqrt{x^2 - 4}$, then domain of f is.
 (a) $[-2, 2]$ (b) $(-\infty, \infty)$ (c) $(-\infty, 2] \cup [2, \infty)$ (d) $[-3, 3]$
26. If $f(x) = \sqrt{x+1}$ then domain of f is.
 (a) $(-\infty, -1] \cup [1, \infty)$ (b) $(-\infty, -2] \cup [2, \infty)$ (c) $(-\infty, \infty)$ (d) $[-1, 1]$
27. If $f(x) = \sqrt{x+1}$, then range of f is.
 (a) $(-\infty, 0]$ (b) $[0, \infty)$ (c) $(-\infty, \infty)$ (d) $[-\infty, 0]$
28. If $f(x) = |x - 5|$, then range of f is.
 (a) $[0, \infty)$ (b) $(-\infty, \infty)$ (c) $(-\infty, 0)$ (d) $(0, \infty)$
29. If $f(x) = \frac{3}{1-x}$ then domain of f is.
 (a) R (b) $R - \{0\}$ (c) $R - \{3\}$ (d) $R - \{1\}$
30. The range of function $f(x) = \frac{|x|}{x}$ is
 (a) $R - \{0\}$ (b) R (c) $[-1, 1]$ (d) -1 and 1
31. $x = a \sec \theta$, $y = b \tan \theta$ are parametric equation of.
 (a) Circle (b) Parabola (c) Ellipse (d) Hyperbola
32. $x = at^2$, $y = 2at$ represents the equation
 (a) $y^2 = 4ab$ (b) $y^2 = 4ax$ (c) $x^2 + y^2 = a^2$ (d) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$
33. If $f(x) = \sin x$ and $g(x) = \frac{1}{\tan x}$, then go $f(x) =$.
 (a) $\cot(\sin x)$ (b) $\sin(\cot x)$ (c) $\cos(\tan x)$ (d) $\sin(\tan x)$

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34. If $f(x) = \tan^{-1}x$ and $g(x) = \tan x$, then $f \circ g(x) =$
 (a) $\tan^{-1}x \cdot \tan x$ (b) x (c) $\tan^{-1}x \cot x$ (d) $\tan^{-1} x \sin x$
35. If $f(x) = -2x + 8$, then $f^{-1}(-1) =$
 (a) $\frac{9}{2}$ (b) $\frac{7}{2}$ (c) $\frac{2}{9}$ (d) 0
36. If $f(x) = \frac{2x+1}{x-1}$, then
 (a) $f^{-1}(3) < f^{-1}(1)$ (b) $f^{-1}(3) > f^{-1}(1)$ (c) $f^{-1}(3) = f^{-1}(1)$ (d) None
37. If $f(x) = \ln x$, then $f^{-1}(x) =$
 (a) $\sin x$ (b) $\cos x$ (c) $\ln x$ (d) e^x
38. If $f(x) = e^x$, then $f^{-1}(x) =$
 (a) $\sin x$ (b) $\cos x$ (c) $\ln x$ (d) e^x
39. $\lim_{x \rightarrow 0} \frac{x^3 - x}{x + 1} =$
 (a) 0 (b) 1 (c) 2 (d) 3
40. $\lim_{x \rightarrow 2} \frac{x - 2}{\sqrt{x} - \sqrt{2}} =$
 (a) $\sqrt{2}$ (b) 2 (c) $2\sqrt{2}$ (d) 0
41. $\lim_{x \rightarrow 0} \frac{x}{\sin x} =$
 (a) 0 (b) 1 (c) 2 (d) 6
42. $\lim_{x \rightarrow 0} \frac{x}{\tan x} =$
 (a) 0 (b) 1 (c) 2 (d) 6
43. $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} =$
 (a) 0 (b) 1 (c) e (d) ∞
44. $\lim_{x \rightarrow 0} \frac{\sin^2 x}{x} =$
 (a) 0 (b) 1 (c) 2 (d) does not exist
45. $\lim_{x \rightarrow 0} \frac{\sin x^\circ}{x} =$
 (a) $\frac{\pi}{180}$ (b) $\frac{180}{\pi}$ (c) 180π (d) 1
46. $\lim_{x \rightarrow 0} \frac{\tan x^\circ}{x} =$
 (a) $\frac{\pi}{180}$ (b) $\frac{180}{\pi}$ (c) 180π (d) 1

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47. $\lim_{x \rightarrow 0} \frac{\sin x}{\sin bx} =$

(a) $\frac{a}{b}$

(b) $\frac{1}{ab}$

(c) $\frac{b}{a}$

(d) ab

48. $\lim_{x \rightarrow 0} \frac{\sin 2x}{\sin 3x} =$

(a) $\frac{2}{3}$

(b) $\frac{3}{2}$

(c) $\frac{1}{6}$

(d) 1

49. $\lim_{x \rightarrow \infty} \left(1 + \frac{1}{x}\right)^x =$

(a) 0

(b) 1

(c) 2

(d) e

50. $\lim_{x \rightarrow 0} (1 + 2x)^{\frac{1}{x}} =$

(a) e^{-1}

(b) e^2

(c) e

(d) e^3

PARHOZONE

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