Navik GD Paper Mathematics 20 March 2021 (All Shifts)

20 Questions

Que. 1 Find the values of k so the line $\frac{x-2}{2k} = \frac{y-3}{3} = \frac{z+2}{-1}$ and $\frac{x-2}{8} = \frac{y-3}{6} = \frac{z+2}{-2}$ are parallel.

1. -2
2. 2
3. 1/2
4. 4

Solution Correct Option - **2**

Que. 2 The solution of the differential equation $y\frac{dy}{dx} = x + 1$ is

1. $y^2 - x^2 + 2x - c = 0$
2. $y^2 + x^2 - 2x - c = 0$
3. $y^2 - x^2 - 2x - c = 0$
4. None of these

Solution Correct Option - **3**

Que. 3 The domain of $\cos^{-1}(2x + 1)$ is:

1. [-2, 1]
2. [-1, 1]
3. [-1, 0]
4. None of these

Solution Correct Option - **3**

Que. 4 In a ΔABC, if a = 13, b = 14 and c = 15 then find the value of tan (C/2) ?

1. 1/3
2. 2/3
3. 4/3
4. None of these

olution Correct Option - **2**

Que. 5 If $6\sin^2 x - 2\cos^2 x = 4$,then find the value of tan x?

1. √3
2. √2
3. 2
4. None of these

Solution Correct Option - **1**

Que. 6 What is the value of λ for which the vectors $\hat{i} - \hat{j} + \hat{k}, 2\hat{i} + \hat{j} - \hat{k}, \hat{i}\lambda - \hat{j} + \hat{k}\lambda$ are coplanar

1. 5

2. 4
3. 2
4. 1

Solution Correct Option - **4**

Que. 7 For the data 3, 5, 1, 6, 5, 9, 5, 2, 8, 6 the mean, median and mode are x, y and z respectively. Which one of the following is correct?

1. $x = y \neq z$
2. $x \neq y = z$
3. $x \neq y \neq z$
4. $x = y = z$

Solution Correct Option - **4**

Que. 8 The difference of focal distances of any point on a hyperbola is equal to the length of

1. latus rectum
2. semi-transverse axis
3. transverse axis
4. semi-latus rectum

Solution Correct Option - **3**

Que. 9 The constraints $-x + y \leq 1$, $-x + 3y \leq 9$ and $x, y \geq 0$ defines on

1. Bounded feasible space
2. Unbounded feasible space
3. Both unbounded and bounded feasible space
4. None of the above

Solution Correct Option - **2**

Que. 10 $\int_{-1}^{1} x\,|x|\,dx$ is equal to

1. 0
2. $\frac{2}{3}$
3. 2
4. -2

Solution Correct Option - **1**

Que. 11 $\int \frac{x}{1+x^2}\,dx =$

1. $\log(1 + x^2) + c$
2. $\log \sqrt{(1 + x^2)} + c$
3. $2\log(1 + x^2) + c$
4. None of these

Solution Correct Option - **2**

Que. 12 What is the value of $\log_9 27 + \log_8 32$?

1. 7/2
2. 19/6
3. 4
4. 7

Solution Correct Option **- 2**

Que. 13 Evaluate: $\int \frac{1-\cos 2x}{1-\sin^2 x}\, dx$

1. $\tan x - 2x + c$
2. $2 \tan x - x + c$
3. $2 \tan x - 2x + c$
4. $2 \tan x + 2x + c$

Solution Correct Option **- 3**

Que. 14 Find dy/dx when $y = x^2 e^x$

1. $e^x x(x + 2)$
2. $2xe^x$
3. $e^x(x + 2)$
4. $e^x x$

Solution Correct Option **- 1**

Que. 15 If $y = \sqrt{\sin x + \sqrt{\sin x + \sqrt{\sin x + \ldots \infty}}}$ then $\frac{dy}{dx}$ is equal to:

1. $\frac{\cos x}{2y-1}$
2. $\frac{-\cos x}{2y-1}$
3. $\frac{\sin x}{1-2y}$
4. $\frac{-\sin x}{1-2y}$

Solution Correct Option **- 1**

Que. 16 Which of the differential equation satisfy $y = me^x - ne^{-x}$ as a solution?

1. $\frac{d^2y}{dx^2} + y = 0$
2. $\frac{d^2y}{dx^2} - y = 0$
3. $\frac{d^2y}{dx^2} = \frac{dy}{dx} + y$
4. $\frac{d^3y}{dx^3} = \frac{dy}{dx}$

Solution Correct Option **- 2**

Que. 17 If (2 - i) (x - iy) = 3 + 4i then 5x is

1. 2
2. 3
3. 4
4. 5

Solution Correct Option **- 1**

Que. 18 The points (5, -2), (8, -3) and (a, -12) are collinear if the value of a is

1. 31
2. 32
3. 34
4. 35

Solution Correct Option **- 4**

Que. 19 If the coefficient of x in $(x^2 + k/x)^5$ is 270, then k is

1. 4
2. 3
3. 2
4. 5

Solution Correct Option **- 2**

Que. 20 Find the range of the real function $f(x) = \frac{x+1}{x-3}$

1. R - {3}
2. R - {1}
3. R
4. R - {-3}

Solution Correct Option **- 2**