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**Question No: 1 ( Marks: 1 ) - Please choose one**

$$h(x) = \frac{1}{(x-2)(x-4)}$$

is

The domain of the function

- ▶  $(-\infty, 2) \cup (2, 4) \cup (4, +\infty)$
- ▶  $(-\infty, 2] \cup \{2, 4\} \cup \{4, \infty)$
- ▶  $(-\infty, 2.5) \cup (2.5, 4.5) \cup (4.5, \infty)$
- ▶ All of these are incorrect

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**Question No: 2 ( Marks: 1 ) - Please choose one**

The graph of  $y=4$  is parallel to

- ▶ X-axis
- ▶ Y-axis
- ▶ Both of these
- ▶ None of these

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**Question No: 3 ( Marks: 1 ) - Please choose one**

The graph of the equation  $y = x^2 - 4x + 5$  will represent

- ▶ Parabola
- ▶ Ellipse
- ▶ Straight line
- ▶ Two straight lines

**Question No: 4 ( Marks: 1 ) - Please choose one**

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$\pi$  is called

- ▶ An integer
- ▶ A rational number
- ▶ An irrational number
- ▶ A natural number

**Question No: 5 ( Marks: 1 ) - Please choose one**

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If  $x$  and  $y$  are both odd integers, which of the following must also be an odd integer?

- ▶  $x+y$
- ▶  $x \cdot y$
- ▶  $x/y$
- ▶  $x-y$

**Question No: 6 ( Marks: 1 ) - Please choose one**

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If the  $\lim_{x \rightarrow a} f(x) = L$  then the inequality  $(L - \varepsilon) < f(x) < L + \varepsilon$  holds in any subset of the interval

►  $(a - \delta, a) \cup (a, a + \delta)$

►  $(a - 1, a) \cup (a, a + 1)$

►  $(a - \varepsilon, a) \cup (a, a + \varepsilon)$

► None of these

**Question No: 7 ( Marks: 1 ) - Please choose one**

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If the functions  $f$  and  $g$  are continuous at  $c$  then ,which of the following must be continuous

►  $f+g$

►  $f-g$

►  $f.g$

► All of these

**Question No: 8 ( Marks: 1 ) - Please choose one**

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$\tan(x)$  is continuous every where except at points

►  $\pm \frac{k\pi}{2} (k = 1, 3, 5, \dots)$

$$\pm \frac{k\pi}{2} (k = 2, 4, 6, \dots)$$



$$\pm \frac{k\pi}{2} (k = 1, 2, 3, 4, 5, 6, \dots)$$



► None of these

**Question No: 9 ( Marks: 1 ) - Please choose one**

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$$\frac{d}{dx}[f(g(x))] =$$

►  $f'(g(x)) \cdot g'(x)$

►  $f'(g(x)) + g'(x)$

►  $f'(g(x)) \cdot f'(x)$

► None of these

**Question No: 10 ( Marks: 1 ) - Please choose one**

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Let  $f$  be a function on an interval, and  $x_1$  and  $x_2$  denote the points in that interval,  
if  $f(x_1) = f(x_2)$  for all  $x_1$  and  $x_2$  then we can say that function is a

► Constant function

► None of these

► increasing function

► Decreasing function

**Question No: 11 ( Marks: 1 ) - Please choose one**

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If  $f''(x) > 0$  on an open interval  $(a,b)$  then  $f$  is ----- on  $(a,b)$

- ▶ Concave up
- ▶ Concave down
- ▶ Closed
- ▶ None of these

**Question No: 12 ( Marks: 1 ) - Please choose one**

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Let  $L_1$  and  $L_2$  be non vertical lines with slopes  $m_1$  and  $m_2$  ,respectively Both the lines are parallel if and only if

- ▶  $m_1 = m_2$
- ▶  $m_1 \neq m_2$

$$m_1 = \frac{1}{m_2}$$

- ▶
- ▶ None of these

**Question No: 13 ( Marks: 1 ) - Please choose one**

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The set  $\{x : a \leq x \leq b\}$  can be written in the form of interval

- ▶  $(a,b)$
- ▶  $[a,b]$

