Differentiability - Class XII

Related Questions with Solutions

Questions

Quetion: 01

f(x) = |x[x]| in – 1 ≤ x ≤ 2 , where [x] is greatest integer ≤ x then f(x) is
A. continuous at x = 0
B. discontinuous x = 0
C. not differentiable at x = 2
D. differentiable at x = 2

Solutions

Solution: 01

$$f(x) = |x[x]|, -1 \leq x \leq 2$$

$$= \begin{cases} -x, -1 \leq x < 0 \\ 0, 0 \leq x < 1 \\ x, 1 \leq x < 2 \\ 4, x = 2 \end{cases}$$

f[0] = 0, $f[0^-] = 0$, $f[0^+] = 0$. So, f[x] is continuous at x = 0

f[2] = 4, $f[2^-] = 2$ So, f[x] is neither differentiable nor continuous at x = 2

Correct Options

Answer:01
Correct Options: A, C