



বাংলাদেশ আর্মি ইন্টারন্যাশনাল ইউনিভার্সিটি অব সায়েন্স এন্ড টেকনোলজি, কুমিল্লা
BANGLADESH ARMY INTERNATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY (BAIUST), CUMILLA

CT-01

Sub Code: MATH 111

Dept.: CSE

Set: B

Fall: 2025

Time: 30 m.

Marks: 10

* Answer any two (02) from the followings

Section: B

1.	<p>A function $f(x)$ is defined as follows-</p> $f(x) = \begin{cases} 1+2x & \text{for } -1/2 \leq x < 0 \\ 1-2x & \text{for } 0 \leq x < 1/2 \\ -1+2x & \text{for } x \geq 1/2 \end{cases}$ <p>Discuss the continuity of the function at $x = 0$.</p>	05
2.	<p>Compute $\lim_{x \rightarrow 0} \frac{\tan x - \sin x}{\sin^3 x}$.</p>	05
3.	<p>Define limit with graphical interpretation. Show whether the limit $\lim_{x \rightarrow \pi} \frac{\sin x}{\pi - x}$ exists and, if it does, find its value.</p>	05