



Bangladesh Army University of Engineering & Technology (BAUET)

Department of Computer Science and Engineering

Second Year Fourth Semester (16th Batch), Summer-2024

Course Code: MATH – 2247

Course Title: Complex Variable and Laplace Transformation

Class Test-04

Full Marks: 15

Time: 20 Minutes

N.B.: Figures shown in the right margin indicate full marks.

Q.1 If $L\{F(t)\} = f(s)$ then applying the Laplace transform of second derivative, verify that 7

$$L\{\sin 4t\} = \frac{4}{s^2 + 16}, s > 0.$$

Q.2 Relating the Laplace transform, evaluate (any one) 8

i. $L\{t^2 \cos 5t\}$

ii. $\int_0^{\infty} t e^{-5t} \cos t \, dt$

iii. $\int_0^{\infty} \frac{e^{-3t} - e^{-4t}}{t} \, dt$