



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

Department of Electrical and Electronic Engineering

Level-3, Term-I

Mid Term Examination, Spring-2023

Course Code: EEE 303

Course Title: Digital Electronics

Notes:

Time: 1 Hour

a. Each question carries 30 marks.

Full Marks: 60

b. Figure on the right of each question indicate marks for respective question.

Answer any two questions including ques. No. 1

1. a. Convert the following decimal numbers to the indicated bases: (09)
 - i) 41.6875 to Binary
 - ii) 153.513 to Octal
- b. Design a subtractor circuit by fulfilling the following conditions: (15)
 - i) It can subtract three bits.
 - ii) Design with two half-subtractors and an OR gate
- c. State duality principle in Boolean algebra. (06)
2. a. Write short note on Gray code. (10)
- b. Express the Boolean function, F in a sum of minterms: $F = A + B'C$. (10)
- c. What is combinational circuit? Find the complement of the function: (10)
$$F = yx'z' + x'y'z.$$
3. a. Simplify the following Boolean function using Karnaugh map. (10)
$$F = A'C + A'B + AB'C + BC$$
- b. Implement the function, F using NAND gates: $F = x'y + x'y'$ (15)
- c. State and Explain De-Morgan laws. (05)