

ETU 07422: DIGITAL ELECTRONICS - 2020/2021
BRNG20-COE

Assignment 04

10th July 2021

INSTRUCTIONS

1. Assignment should be submitted physically latest by **Monday 12th 2021 at 1400hrs.**
Late submission will not be accepted.
2. *Solutions should be conducted and submitted in group basis (not more than five members per group), typed and printed with a cover page and list of candidates (names and reg No#)*

Question 1

- (i) Compare the performance of binary serial and parallel adders
- (ii) Design of three-bit parity generator. [Hint Include the odd parity generator and even parity generator]
- (iii) State the effect of minimizing a fundamental sum of products expression

Question 2

- (i) Describe the main function of a demultiplexer in digital circuits .
- (ii) Briefly explain, why a multiplexer can be used as a 'universal logic block'?

Question 3

- (i) Describe the term half adder as used in digital electronics
- (ii) Design a single bit comparator [Hint: Use circuit diagram to present your design]

Question 4

- (i) State the main difference between non-critical and critical races
- (ii) What is meant by 'breaking the feedback path' in the analysis of an asynchronous sequential circuit?