Progressive Education Society's

Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16, NEP 2020 (Autonomous)

End Semester Examination: MAR / APR 2025

***Total No. of Questions**: 4/18* ***Total No. of Pages**:*

FIRST YEAR (FYBSc)
EL 12102: Fundamentals of Digital Electronics
(Semester II)

Program: **Bsc** **Credits:** 2
Program Specific: **FYBSC GENERAL Electronics**
Time: 2 Hours
Course Type: ESE **Max. Marks:** 30
Paper: **Fundamentals of Digital Electronics**
SET: A

Instructions to the candidate:

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Draw a well labelled diagram wherever necessary.*

Q1) Answer the following **[5 X 1= 5]**

a) Draw the Logic diagram of OR gate using NAND gate
b) Draw the block diagram of Half adder
c) Draw JK FlipFlop using NAND Gate
d) Explain positive and Negative logic
e) Write DeMorgans Theorem

Q2) Answer the following (Attempt any 5/7) **[5 X 2 =10]**

a) Define Encoder
b) Define Decoder
c) Draw D Flipflop and T Flipflop
d) Define Multiplexer
e) Define Demultiplexer
f) Write 1,s compliment of(110011)
g) Write 2,s compliment of (1110011)

Q3) Answer the following (Attempt any 2/4 **[2 X 5 = 10]**

a) Convert Hexadecimal (B7) number into decimal number
b) Subtract binary number (1010) from(1111)
c) Draw R_2R DAC. (Digital to Analog convertor
d) Explain in short data converter

Q4) Answer the following (Attempt any 1/2) **[5 X 1 = 5]**

a) Convert the expression Y=AB+AC+BC in standard SOP form
b) Define combinational and sequential Logic circuits with examples.

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