QP CODE: 19101819

Reg No : .....

Name : .....

B.Sc. DEGREE (CBCS) EXAMINATION, MAY 2019

Second Semester

Core Course - **EL2CRT05 - DIGITAL ELECTRONICS**

(Common for B.Sc Electronics and Computer Maintenance Model III B.Sc Electronics Model III)

2017 ADMISSION ONWARDS

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Maximum Marks: 80 **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries **2** marks.

1. What is octal number system?
2. Write the boolean expression for XNOR gate?
3. Simplify the following Boolean functions to minimum number of literals, K = (x+y)(x+y')
4. What is the function of pull-up and pull down resistors ?
5. Draw the transfer charcteristics of a TTL gate?
6. Distinguish between a half adder and a full adder.
7. Draw the logic diagram of a gray to binary code convertor?
8. Compare a decoder with a demultiplexer.
9. What do you mean by T flip flop?
10. How many clock pulses are required to shift a byte of data into and out of an eight bit SISO shift register?
11. Write a short note on counter applications?
12. What do you mean by timing diagram?

(10×2=20)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Explain 1's and 2's compliment addition and subtraction operation with example?
14. Describe various steps involved in simplifying a Boolean expression using K Map?
15. Why CMOS Logic gates are slower than other logic families ?
16. Describe a two bit magnitude comparator?
17. Sketch and explain an odd parity generator circuit?
18. Differentiate between latches and flip flops?
19. Discuss about the Master slave flip flop?
20. What do you mean by a two bit asynchronous counter?
21. Expain the concept of MOD 10 counter?

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **15** marks.

22. Appy Demorgan's theorem and simpify the following expressions
    (a) (ABC)' +(D'+E)' =Y (b) (A+BC')'+D(E+F')' =Y (c) (A+B+C)' +(D'E)' =Y
23. With neat diagram explain the working of a TTL NAND gate?
24. Explain the working of decimal to BCD encoder?
25. Draw and explain the working of a 3 bit synchronus up/down counter?

(2×15=30)