

**4241**

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL-2019**  
**DECE - THIRD SEMESTER EXAMINATION**  
**DIGITAL ELECTRONICS**

**Time: 3 Hours]****[Max. Marks: 80**

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**PART-A****10x3=30**

**Instructions:** 1) Answer **all** the questions and each question carries **three** marks.  
2) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Convert hexadecimal number (A68.34. into decimal, octal and binary number system.
2. Subtract 1001 from 1110 using one's complement and two's complement method.
3. State De-Morgan's theorems.
4. Give the IC numbers of two input AND, OR and NOR gates.
5. State the necessity of clock.
6. Draw half adder circuit using NAND Gates only.
7. List any three applications of decoders.
8. Draw NOR latch with truth table.
9. Define modulus of a counter.
10. State applications of shift registers.

**PART-B**

**5x10=50M**

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**Instructions:** 1) Answer any **five** questions and each question carries **ten** marks.

2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

3) Any missing data may be assumed as per standards.

11. (a) Distinguish between weighted and un-weighted codes. 5M  
(b) Explain different binary codes. 5M
12. Realize AND, OR and NOT operations using NAND and NOR gates. 10M
13. Draw and explain TTL NAND Gate with open collector. 10M
14. (a) Draw and explain 4 bit parallel adder using full adders. 6M  
(b) Compare the performance of serial and parallel adder. 4M
15. Draw and explain BCD to decimal decoder. 10M
16. Draw and explain Master Slav JK flip flop with truth table. 10M
17. Draw and explain 4 bit asynchronous counter and also draw its timing diagram. 10M
18. Draw and explain the working o 4 bit shift right register. 10M

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