



C09-AEI-305

3215

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2014

DAEI—THIRD SEMESTER EXAMINATION

DIGITAL ELECTRONICS

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

1. Convert the decimal number 908 into octal number.
2. Draw the symbols of AND, OR, NOT gates.
3. List the applications of multiplexer.
4. Distinguish between serial and parallel binary adder.
5. State the race around condition.
6. State the need for preset and clear inputs.
7. Distinguish between synchronous and asynchronous counters.
8. State the need for a register.
9. Define volatile and non-volatile memories.
10. Define monotonicity and settling time of D/A converter.

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PART—B

10×5=50

- Instructions :** (1) Answer *any five* questions.
(2) Each question carries **ten** marks.
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Perform the following binary subtractions by using 2's complement method.

(a) 11101–11111

(b) 1110–1011

12. (a) State the importance of a parity bit. 4

(b) State Demorgan's laws. 6

13. Draw and explain the two-bit digital comparator.

14. Draw and explain the 2's complement adder-subtractor.

15. (a) Explain the operation of RS flip flop with a neat diagram. 6

(b) Explain the operation of *d* flip-flop with a neat diagram. 4

16. Draw and explain the 4-bit synchronous counter.

17. (a) Explain the working of ring counter. 7

(b) List the applications of ring counter. 3

18. Explain the D/A convertor using binary weighted resistor with a neat diagram.
