

MCA 1st Semester Examination, 2019

MCA

(Practical)

PAPER –MCA-191

Full Marks : 100

Time : 3 hours

The figures in the right hand margin indicate marks

Answer any **two** questions selecting
on **lottery** basis :

35 × 2

1. Design and implement a BCD to excess 3 code converter using full adder.
2. Design and implement 1-bit full subtractor circuit.

(Turn Over)

3. Design and implement a full adder circuit using NAND gates only.
4. Design and implement a 4-bit adder/subtractor using flip-flop.
5. Design and implement a 8-bit parity generator.
6. Design and implement a 2 bit digital comparator.
7. Design and implement a half-subtractor using NAND gates only.
8. Design and implement a mod-10 counter.
9. Design and implement a D flip-flop using SR/JK FFs.
10. Design and implement a 4 bit right shift register.

11. Design and implement a JK flip-flop.
12. Design and implement a 4 bit left shift register.
13. Design and implement a JK master-slave flip-flop.
14. Design and implement a 4 bit ripple counter.
15. Design and implement a 4 bit ring counter.

PNB— 10 Marks

Viva-voce — 20 Marks
