3230 – C81 – IIISS – N – 14

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2014

ELECTRONICS

(New Syllabus)

Time : 3 Hours] [Max. Marks : 80

Answer **all** *questions in the same answer book.*

PART – A (Marks: $10 \times 2 = 20$)

Answer any **ten** *of the following.*

1. What is Optoelectronics?
2. Mention the applications of solar cell.
3. Convert $(DAD)_{16}$ into Decimal member.
4. Find the difference between 1100 and 1001 using 1's compliment.
5. What is ASCII code? Give any two examples?
6. Draw the logic circuit for $\overline{AB} + B + C$
7. Prove that (A+B)(A+C) = A+BC using Boolean algebra.
8. Define rise time and fall time in a pulse.
9. What is decoder?
10. Draw a circuit diagram of Half subtractor.
11. What is shift register? Give examples.
12. Write the difference between synchronous and asynchronous counters.

PART – B (Marks: $6 \times 5 = 30$)

Answer any **six** *of the following.*

13. Explain the working of photodiode and draw the VI-Characteristics.
14. Discuss the conversion of binary to decimal and vice versa, with example.
15. Write a note on BCD-code.
16. A four variable truth table has low output from 0000 to 1000 and high output for 1001, don't care far 1010 to 1111. Write the simplified boolean equation using k-map.
17. Explain with circuit CMOS inverter.
18. What is a full adder? Draw its circuit diagram and truth table.
19. Explain with circuit diagram, working of 3 bit D to A converter using binary weighted resister.
20. What is flip-flop? Explain D-Flip-flop.

[P.T.O.

PART – C (Marks: $3 \times 10 = 30$)

Answer the following.

21. Describe construction, working and applications of photoconductive cell.

Or

Explain the conversion of grey to binary and vice-versa using XOR-gate with one illustrative example.

22. Name the universal gates. Why they are called So? Verify their universal property.

Or

Describe 4:1 multiplexer and 1:4 demultiplexer using gates.

23. Explain clocked JK-flip-flop using gates, discuss race around condition.

Or

With a circuit diagram and timing diagram explain the working of decade counter.