OR

II. a) Differentiate between the saturated and non-saturated logic. 4(5)

b) Discuss important characteristics of CMOS digital logic family. 8(10)

c) What are integrated circuits? 4(5)

Unit - II

III. Write the Boolean expression and truth tables as well as draw the diagrams for the following logic gates:

a) OR b) AND

c) NOR d) NAND 4×4=16(4×5=20)

OR

IV. a) Write down 8 basic Boolean laws. 8(10)

b) What is De-Morgan's theorem? Discuss its duality. 8(10)

Unit - III

V. a) Draw the circuit diagram of a half adder and explain its working with the help of suitable diagrams. 8(10)

b) Draw the circuit diagram of a full adder and discuss its working. 8(10)

OR

VI. a) What are flip-flops? Explain the working of RSFF and write down its truth table 8(10)

b) What is a master-slave FF? Discuss its working with the help of a suitable diagram. 8(10)

Unit - IV

VII. Discuss the working of a R-2R ladder D/A converter 16(20)

OR

VIII. Explain how can dual slope integrator method be used for A/D conversion? 16(20)

Unit - V

IX. a) What is a semi conductor?

b) What is a diode?

c) What is a NOR gate?

d) What is a truth table?

e) What are combinational circuits?

f) What are sequential circuits?

g) What is a multiplexer?

h) What is a decoder? 8×2=16(8×2.5=20)

+++

[Total No. of Questions - 9] [Total No. of Printed Pages : 3]
(2101)

9332

B.C.A. I Year Examination

Digital Electronics

Paper - BCA-103

(New Syllabus)

Time : 3 Hours **Max. Marks :(Regular):80**

(ICDEOL): 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt **five** questions in all selecting **one** question each from first **four** units. Question no.**IX** is **compulsory.**

Unit - I

I. a) Discuss the concept of energy bands in solids. **8(10)**

b) What is a pn junction diode? How do they work in forward and reverse bias? Explain with the help of suitable diagrams **8(10)**