Roll No.....

Total No. of Section : 03

Total No. of Printed Pages : 03

Code No. : C-193

Annual Examination - 2018

BCA Part - I

(BCA-101)

THEORETICAL FOUNDATION OF COMPUTER SCIENCE

Paper - III

INTRODUCTORY ELECTRONICS

Max.Marks : 50

Time : 3 Hrs. **Min Marks : 20**

Note: Section 'A' , containing 10 very short answer type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

Section-'A'

Very short answer type questions. Answer in one or two sentences (1x10=10)

Q.1 What is forbidden energy gap?

Q.2 What is a hole in semiconductors?

Q.3 What is a Grey code?

Q.4 What is a 2's complement?

Q.5 Convert $(4AD)_{16}$ into decimal.

Q.6 Draw the truth table of AND Gate.

Q.7 Find $(20.33)_{10} = (?)_2$.

P.T.O.

Q.8 What is a multiplexer?

Q.9 What is a T flip-flop?

Q.10 Convert $(562)_8$ into Hexadecimal.

Section-'B'

Answer the following questions in about 150-200 words.

(3x5=15)

Q.1 Explain the Common-Emitter amplifier of the PNP transistor.

OR

Explain RTL in brief.

Q.2 Describe the advantages and disadvantages of IC in brief.

OR

Explain the scale of Integration in ICs.

Q.3 Explain any one error detection code.

OR

Perform the following :

i) $(101.101)_2 = (?)_{10}$

ii) $(1111)_2 - (0110)_2 = (?)_2$

iii) $(111110111)_2 = (?)_8$

Q.4 Describe the Demorgan's theorem.

OR

Write the truth table for NAND and XOR gates. Also draw their symbols.

Q.5 Write the difference between a combinational and a sequential circuit.

OR

Describe shift registers in brief.

Section-'C'

Answer following questions in about 300-350 words.

(5x5=25)

Q.1 Explain the working of a diode when connected to a DC source. Give suitable diagrams.

OR

Describe DTL and TTL.

Q.2 Classify various ICs by structure. Explain each in brief.

OR

Decribe following :

i) Digital integrated ICs

ii) Define Etching and wafer in ICs

Q.3 Explain overflow and underflow with example.

OR

Explain Excess-3 code with example.

Q.4 Explain "Sum of Product" and "Product of Sum" with example.

OR

What are K-Maps? Write their significance.

Q.5 Write the working of JK flip-flop with suitable diagrams.

OR

Write short note on RAM and ROM.

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