Roll No.....

Total No. of Sections : 03

Total No. of Printed Pages : 03

Code No. : B-403(B)

Annual Examination - 2017

BCA - I

THEORETICAL FOUNDATION OF COMPUTER SCIENCE

BCA-101

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'

(Answer the following very short-answer-type questions in one or two sentences.) : **(1x10=10)**

Q.1 What do you understand by transistor?

Q.2 What do you understand by diode?

Q.3 Write the limitation of IC's .

Q.3 Convert $(19.6)_{10}$ into binary

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

Q.6 Convert $(562)_{10}$ into octal.

Q.7 Make truth table of NOR Gate.

Q.8 Solve $(34)_8 \times (67)_8$.

Q.9 What is the function of a flip-flop?

Q.10 What do you understand by RAM?

P.T.O.

Section - 'B'

Answer the following short-answer-type questions with word limit 150-200 : **(3x5=15)**

Q.1 Explain the working of Diode-Transistor Logic (DTL).

OR

Explain the working of PN Junction diode in Forward Biasing.

Q.2 Write the advantages of Integrated circuits (I C's).

OR

Classify IC's on the basis of structure.

Q.3 Explain 1'S and 2'S complement method with example.

OR

Solve the following :

(a) $(1111000)_2 \div (100)_2$

(b) $(10111)_2 \times (101)_2$

(c) $(100101)_2 + (1101111)_2$

Q.4 Explain XOR Gate with appropriate truth table.

OR

Make logic diagram of the following expression :

$$\overline{x.y} + x + \overline{y+z}$$

Q.5 What is ROM? Explain its working.

OR

Explain the working of shift register.

Section - 'C'

Answer the following long-answer-type questions with word limit 300-350 : **(5x5=25)**

Q.1 Explain the characteristic curves of NPN transistor in Common Emitter (CE) mode.

OR

Explain the working of Registor-Transistor Logic (RTL) and write its characteristics.

Q.2 Explain the various methods of fabrication of Integrated circuits (IC's).

OR

Explain basic monolithic integrated circuit technology.

Q.3 Explain ASCII codes.

OR

Explain Grey codes.

Q.4 Using Boolean's law, solve the following :

$$xy + \overline{xz} + \overline{xyz}(xy+z)$$

OR

Draw Karnaugh map for function f and reduce it into a sum of product form.

Q.5 Explain the working of R-S flip-flop.

OR

What is De-multiplexer? Explain its working.

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