



Shree H.N.Shukla group of colleges

PHYSICS

S.Y.B.Sc. (Sem. IV) (CBCS)

Unit Test examination

PAPER- 401

UNIT -4 : SEMICONDUCTOR DEVICE & DIGITAL CIRCUIT

DATE :

TOTAL MARKS : 30

Instructions: All questions are compulsory.

The right side figure indicates total marks of the question.

Draw the figure wherever necessary.

Write answers of all the questions in main answer sheets.

SECTION-A

Q.1: One marks questions:

[5 MARKS]

- 1 Draw the symbol of LED
- 2 Draw the symbol of solarcell.
- 3 Define: Pinch-off voltage
- 4 What are the three basic logic gates ?
- 5 What is Analog signal?

SECTION – B

Q.2 (A): Short Questions: Write any three : [2 Marks each]

[6 MARKS]

- 1 Give the principle and symbol of the LED.
- 2 Why it is named as JFET
- 3 State De-Morgan's theorems.

Q.2 (B) : Short questions: Write any three: [3 Marks each]

[9 MARKS]

- 1 Explain the working of solar cell.
- 2 Write the difference between JFET and BJT.
- 3 Explain OR function with a 2 input OR gate.

Q.2 (C): Write Detail Note on [Any two]: [5 Marks each]

[10 MARKS]

- 1 Write the principle, construction and working of photodiode.
- 2 Define the JFET parameters and obtain the relation between them.
- 3 Show how a UJT can be used as a relaxation oscillator.
- 4 Explain NAND gate as Universal gates.