



Shree H.N.Shukla group of colleges

PHYSICS

T.Y.B.Sc. (Sem. VI) (CBCS)

Unit Test examination

PAPER- 602

UNIT - 5 : SUPERCONDUCTIVITY

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 Superconducting material act like as perfect _____ .
- 2 BCS theory is based on _____ .
- 3 London's penetration depth $\lambda =$ _____ .
- 4 Who observed phenomena of superconductivity ?
- 5 Current density $J =$ _____ .

SECTION – B

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

[6 MARKS]

- 1 Define Josephson effect.
- 2 What is transition temperature ?
- 3 Explain : critical field.

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

[9 MARKS]

- 1 Explain superconductivity.
- 2 List the properties which don't change in superconductor transition.
- 3 Explain Messiner effect.

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

[10 MARKS]

- 1 Explain BCS theory.
- 2 Gives the application of superconductivity.
- 3 Explain London's theory in detail.
- 4 Explain in detail influence of external agents on superconductivity.