



## Shree H.N.Shukla group of colleges

PHYSICS

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

Unit Test examination

PAPER- 401

UNIT - 5: A.C. CIRCUIT & OSCILLATOR.

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 How many phase shift is produced by single RC section in phase shift oscillator ?
- 2 An oscillator converts d.c. into \_\_\_\_\_.
- 3 Define : Sinusoidal oscillator .
- 4 Define : Tank circuit.
- 5 What is the principle of operation of a bridge circuit.

### SECTION – B

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

**[6 MARKS]**

- 1 What will be the resonant frequency of a series LC circuit, if  $L = 200\text{micro H}$  and  $C = 200\text{ PF}$ .
- 2 In Hartely 's oscillator : give the Frequency and feedback fraction ratio.
- 3 In colpitt's oscillator : give the Frequency and feedback fraction ratio.

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

**[9 MARKS]**

- 1 What is oscillator ? Give its advantage.
- 2 Draw the circuit daigaram wein bridge oscillator.
- 3 Give the classification of A.C. bridges.

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

**[10 MARKS]**

- 1 Explain the Phase shift oscillator with neat diagram.
- 2 Explain kohlaraus conductivity bridge.
- 3 Explain the colpitt's oscillator with neat diagram.
- 4 Obtain the general conditions for bridge balance.