

2021

PHYSICS

[Honours]

(Practical)

PAPER – VII

*Full Marks : 100**Time : 4 hours**The figures in the right-hand margin indicate marks**Candidates are required to give their answers in their own words
as far as practicable**Illustrate the answers wherever necessary*

GROUP – A

Answer any **one** of the following : 40 × 1

1. Construct and study the frequency response of voltage amplifier using a transistor in CE mode and find its band width
 - (a) Write down the necessary theory of the experiment.
 - (b) Draw the circuit diagram. 20 + 20

2. Construct Wien bridge oscillator using OP-AMP and study the waveform of the oscillator and frequency using CRO
 - (a) Give the theory
 - (b) Draw the circuit diagram. 20 + 20

GROUP – B

Answer any **one** of the following : 40 × 1

3. Design a full adder using basic gates : 20 + 20
 - (a) Draw the required circuit diagram
 - (b) Write down the truth table.

(Turn Over)

(2)

4. Construct AND gate using diodes and NOT gate using transistor

(a) Draw circuit diagrams

(b) Write down truth tables for both the design. 20 + 20

GROUP – C

Answer any **one** of the following : 20 × 1

5. Design a circuit and write down the working formula for an inverting amplifier using OP-Amp. 10 + 10

6. Design clocked JK flip-flop using three input NAND gates with preset and clear. Hence write down the truth table. 10 + 10
