

B.Sc. (NEP) Semester-I
SEC13 - Physics - Physics workshop skills

P. Pages : 2

Time : Two Hours



GUG/S/25/15899

Max. Marks : 40

- Notes : 1. All questions are compulsory.
2. Draw neat and well labelled diagrams wherever necessary.

Either:

1. A) i) What is screw gauge? Draw its neat diagram and label it properly. Write precautions to be taken while measurements. 4
- ii) Write down steps or process for measuring the dimension of solid block using vernier caliper with diagram. 4

OR

- B) a) Differentiate between SI and CGS unit system. 2
- b) What is the least count of [1] Meter Scale, [2] vernier caliper, [3] screw gauge? 2
- c) Write the steps to measure the thickness of metal sheet using screw gauge. 2
- d) What is a sextant? Explain it. 2

Either:

2. A) i) Write uses of CRO. 3
- ii) What is regulated power supply? Draw the block diagram of regulated power supply. 3
- iii) Define soldering and flux. 2

OR

- B) a) Write applications of the multimeter? 2
- b) Explain transistors as a switch. 2
- c) What is Relay and write its uses? 2
- d) What is oscilloscope? How it is used? 2

Either:

3. A) i) Explain the basic mechanism of power generation system. 3
- ii) Write advantages of thermal power station. 2
- iii) What is breaks? Write its types. 3

OR

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|----|----|--|---|
| B) | a) | What is wheel and axle? Write its function? | 2 |
| | b) | What are functions of gears? | 2 |
| | c) | How heavy weights are lifted using lever? | 2 |
| | d) | Write the advantages and disadvantages of hydroelectric power generation system. | 2 |

Either:

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|----|----|-----|---|---|
| 4. | A) | i) | Design 'AND', 'OR' and 'NOT' gates using diodes and transistors. Draw their truth tables and symbols. | 6 |
| | | ii) | How 'AND', 'OR' and 'NOT' gates are constructed using 'NAND' gates? | 2 |

OR

- | | | | |
|----|----|---|---|
| B) | a) | What is necessity of filter circuit in a power supply. | 2 |
| | b) | Compare the full wave rectifier and half wave rectifier. | 2 |
| | c) | What is rectifier? Write its advantages. | 2 |
| | d) | Draw a circuit diagram of bridge rectifier using π -section filter. | 2 |

5. Attempt **any eight** questions from the followings.

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|----|--|---|
| a) | What is vernier calipers? | 1 |
| b) | What is meant by zero error? | 1 |
| c) | Define pitch of screw gauge. | 1 |
| d) | What is full form of a CRO? | 1 |
| e) | Write name of soldering filler material. | 1 |
| f) | What is PCB? | 1 |
| g) | What are prime movers? | 1 |
| h) | What are hydraulic brakes? | 1 |
| i) | Write any two sources of energy. | 1 |
| j) | What is full wave rectifier? | 1 |
| k) | Define logic gate? | 1 |
| l) | Draw the symbol and truth table of 'NOT' gate. | 1 |
