

Roll No.: .....

## SGT UNIVERSITY

### END TERM THEORY EXAMINATION JULY-2022

|                           |                          |                |                          |
|---------------------------|--------------------------|----------------|--------------------------|
| Faculty/College of Study: | Engineering & Technology | Year/Semester: | 6 <sup>th</sup> Semester |
| Program:                  | B. Tech. (ME)            | Duration:      | 03:00 Hrs                |
| Course/Subject:           | Fluid Power System       | Maximum Marks: | 60                       |
| Course/Subject Code:      | 13030610                 | Batch:         | 2019                     |

**Instructions:-**

1. Write Your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided correct question paper. Complaint(s) in this regard, if any should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. All Questions are compulsory. Marks are indicated against each question.
4. Illustrate your answer with diagram wherever required.

### SECTION-A

#### (Very Short Answer Type Questions)

**Note: All Questions are compulsory: -**

**[12X1=12 Marks]**

| S. No. | Question  | Marks Allotted |
|--------|---|----------------|
| 1      | What is Pascal's Law?                               | 1              |
| 2      | What are different types of Hydraulic Fluids?       | 1              |
| 3      | Define Fluid Power.                                 | 1              |
| 4      | Classify compressors according to number of stages. | 1              |
| 5      | Differentiate between a pump and a compressor.      | 1              |
| 6      | Define compressor capacity.                         | 1              |
| 7      | How a valve is defined?                             | 1              |
| 8      | What is Control Valve?                              | 1              |
| 9      | List three function of air filter.                  | 1              |
| 10     | Mention the need for fluidics.                      | 1              |
| 11     | Define Free Air.                                    | 1              |
| 12     | What is cause of oxidation?                         | 1              |

**SECTION-B**  
**(Short Answer Type Questions)**

**Note: All Questions are compulsory: -**

**[4X2=8 Marks]**

| S. No. | Question                                      | Marks Allotted |
|--------|---|----------------|
| 13     | What are the limitations of pneumatic system? | 2              |
| 14     | Write the selection criteria for compressor.  | 2              |
| 15     | How does an actuator work?                    | 2              |
| 16     | Name the Gases in Hydraulic fluid.            | 2              |

**SECTION-C**  
**(Descriptive Answer Type Questions)**

**Note: All Questions are compulsory: -**

**[4X4=16 Marks]**

| S. No. | Question  | Marks Allotted |
|--------|---|----------------|
| 17     | Write down the applications of Pneumatics and Hydraulics.<br><b>OR</b><br>Discuss the basic gas laws with suitable examples.  | 4              |
| 18     | Discuss the working of compressors with detailed classification.<br><b>OR</b><br>Explain construction and working of gear pump in hydraulic system with detailed diagram. | 4              |
| 19     | What is 5/2, 3/2 and 4/3 DCV? Explain with neat sketch.<br><b>OR</b><br>Explain pressure relief valve in pneumatic system.  | 4              |
| 20     | If an actuator fails to move, name five possible causes.<br><b>OR</b><br>Name the items to be included in reports dealing with a maintenance process.                     | 4              |

**SECTION-D**  
**(Long Answer Type Questions)**

**Note: All Questions are compulsory: -**

**[4X6=24 Marks]**

| <b>S. No.</b> | <b>Question</b>  | <b>Marks Allotted</b> |
|---------------|--|-----------------------|
| 21            | Discuss principle, construction and working of components in a hydraulic system.<br><b>OR</b><br>Explain basic principle of hydraulics with its applications and advantages. | 6                     |
| 22            | Explain the working of Rotary Vane Compressor with neat diagram.<br><b>OR</b><br>How does Bent Axis pump works? Explain with diagram.  | 6                     |
| 23            | Discuss working of single and double cylinder with symbolic diagram.<br><b>OR</b><br>Describe with the help of diagram the working and need of accumulator.                  | 6                     |
| 24            | Name five causes that can make the pump noisy.<br><b>OR</b><br>Name five reasons for the overheating of fluid in a hydraulic system.   | 6                     |