

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2023****Subject Code:3152311****Date:05-12-2023****Subject Name:Instrumentation, Safety And Maintenance In Plastic Industry****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.
- 5.

- Q.1** (a) Define: (i) Plant Maintenance (ii) Lubricants (iii) Wear **03**
 (b) Define: (i) Calibration (ii) Accuracy (iii) Drift (iv) True value **04**
 (c) List the function of Lubricants. Also list the types of Lubricant according to service. **07**

- Q.2** (a) Explain concept of Plant maintenance. List Primary and Secondary function of maintenance department. **03**
 (b) Explain about corrective maintenance in brief. **04**
 (c) Define Preventive Maintenance. List Aim and advantages of Preventive Maintenance. **07**

OR

- (c) Explain about Functional Element of an Instrument. **07**
Q.3 (a) Define Safety. List types of Safety. How safety can be improved? **03**
 (b) Explain about Safety Hazards in Plastic Industry. **04**
 (c) Explain LVDT in detail with neat sketch. **07**

OR

- Q.3** (a) Explain about Safety in Extrusion Process. **03**
 (b) Explain about causes of wear between screw and barrel. **04**
 (c) What is Manometer? Explain construction, working & Limitations of U-tube manometer with neat sketch. **07**

- Q.4** (a) Define corrosion. Explain basic mechanism of corrosion. List types of corrosion. **03**
 (b) Explain Stress Corrosion and Erosion corrosion. **04**
 (c) List the desirable qualities of an ideal lubricant. Also list effects of additives on Lubricants. **07**

OR

- Q.4** (a) List advantages of strain gauge pressure transducers. **03**
 (b) Define Temperature. List the methods of Temperature measurement. Which formula is used to convert degree centigrade to degree Kelvin. **04**
 (c) Explain about Bimetallic Thermometers in detail with neat sketch. **07**

- Q.5** (a) List the advantages of Resistance Thermometer. **03**
 (b) Explain Predictive maintenance in brief. **04**
 (c) Explain about Thermocouples in detail with neat sketch. **07**

OR

- Q.5** (a) List the reasons for Lubrication failure. **03**
 (b) Which are causes of Fire? What have to do to overcome this fire **04**
 (c) List the types of wear. Explain about different types of wear. **07**
