

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOVEMBER – 2021**

AIRCRAFT INSTRUMENTS

[Maximum Marks: 75]

[Time: 2.15 Hours]

PART-A

(Answer *any three* questions in one or two sentences. Each question carries 2 marks)

- I. 1. List the displays used in Aircrafts.
2. Write the application of pitot-static system.
3. Define degrees of freedom of a gyroscope.
4. List the mandatory parameters recorded.
5. List the type of different types of temperature sensors used in air craft.. (3 x 2 = 6)

PART-B

(Answer any *four* of the following questions. Each question carries 6 marks)

- II. 1. Write about the pitot-static instruments.
2. Explain straight scale display.
3. Explain construction of pitot-static probe used in air craft instruments.
4. Explain the working of Mach meter.
5. Explain gyro horizon.
6. Explain Tacho probe and Indicator System.
7. Describe the surface contact type and immersion type thermocouples. (4 x 6 = 24)

PART-C

(Answer *any of the three units* from the following. Each full question carries 15 marks)

UNIT – I

- III. (a) Describe lever mechanism with necessary diagrams. (7)
(b) Explain LED and LCD display. (8)

OR

- IV. (a) Explain the temperature compensation using Bimetal strips. (8)
(b) Explain about Head up display. (7)

UNIT – II

- V. (a) Explain the working of Aneroid barometer. (8)
(b) Describe the working of Vertical Speed Indicator.. (7)

OR

- VI. (a) Describe the heating circuit arrangement in pitot tube. (8)
(b) Explain the working of Air Speed Indicator. (7)

UNIT- III

- VII. (a) Explain altitude Indication. (8)
(b) Describe the principle of electrically operated engine speed indicator. (7)

OR

- VIII. (a) Explain pneumatic and electric method of driving Gyroscope rotor. (8)
(b) Describe the fundamental properties of Gyroscope. (7)

UNIT - IV

- IX. (a) Explain the working of capacitive type fuel gauge system used in aircrafts. (8)
(b) Describe the working of Pressure switches. (7)

OR

- X. (a) Describe working of Radiation Pyrometer for exhaust gas temperature measurement. (8)
(b) Explain the working principle of Accelerometer. (7)
