



## GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **IN254U - Transducers-II**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

**1) Solve any three sub-questions.**

- a) What are various elastic transducers for measurement of pressure? Explain any two. [5]
- b) Explain construction and working of Electromagnetic flow meter. [5]
- c) State and derive Bernoulli's Theorem used for flow measurement. [5]
- d) Explain Dead weight pressure gauge with neat diagram. Discuss how it is used for calibration of pressure gauge. [5]

**2) Solve any three sub-questions.**

- a) Explain Level measurement using D P Cell. [5]
- b) Explain working principle of Radar Level transmitter for level measurement. [5]
- c) Explain construction and working of Hydrometer. [5]
- d) What are various non contact type temperature measurement transducers? Explain Total radiation pyrometer. [5]

**3) Solve any three sub-questions.**

- a) What is Viscosity? Explain Saybolt Viscometer. [5]
- b) Explain operating principle of Thermocouple. Classify and specify ranges of various types of thermocouple [5]
- c) Discuss cold junction compensation technique in thermocouple. [5]
- d) A platinum resistance thermometer has resistance  $2.2 \Omega$  at  $0^\circ\text{C}$  and  $5.6 \Omega$  at  $100^\circ\text{C}$ . If its resistance is  $7.3 \Omega$  in a bath, find the temperature of the bath on the platinum resistance thermometer? [5]

**4) a) Define pH and pH scale. With neat diagram, explain pH measurement system. [6]**

- b) i. Mass flow meter [5]
- ii. Hair Hygrometer [4]

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