

NGM COLLEGE (AUTONOMOUS) POLLACHI
END-OF-SEMESTER EXAMINATIONS: NOVEMBER - 2024

B.Sc. – PHYSICS
V SEMESTER

MAXIMUM MARKS: 50
TIME: 2 HOURS

PART-IV : SKILL BASED ELECTIVE – I
MECHANICAL MEASUREMENTS

SECTION – A

(10 X 1 = 10 MARKS)

ANSWER ALL THE QUESTIONS.

MULTIPLE CHOICE QUESTIONS.

1. The closeness of measured value to the standard value, is termed as, (K1)
(a) Accuracy (b) Sensitivity
(c) Repeatability (d) All of the above
2. Range of an instrument is, (K1)
(a) All values starting from minimum to the maximum that can be measured
(b) The minimum value that can be measured
(c) The maximum value that can be measured
(d) All of the above
3. A Quartz crystal transducer is a type of, (K1)
(a) a piezoelectric transducer (b) a chemical transducer
(c) a photoelectric transducer (d) None of the above
4. Which of the following is measured using manometer device? (K1)
(a) Pressure (b) Density
(c) pH difference (d) Viscosity
5. Select the correct definition for flow rate.
(a) Amount of fluid flowing per unit time (b) Amount of fluid stored in a container
(c) Amount of pressure in a fluid (d) Amount of fluid velocity

SHORT ANSWER QUESTIONS

6. Wind speed is measured using anemometer. True or false? (K2)
7. Define Sensitivity. (K1)
8. Lissajous figure is use to measure _____ of the sinusoidal wave. (K2)
9. What do you mean by piezoelectric accelerometer? (K2)
10. Define dead zone. (K1)

SECTION – B

(5 X 8 = 40 MARKS)

ANSWER ANY FIVE.

11. Discuss the pressure measurement by Bourdon gauge. (K3)
12. Define 'transducer' and describe the piezoelectric transducer with a diagram. (K3)
13. Explain the theory of Cup and Vane anemometers. (K4)
14. Describe the working principle of ultrasonic flow meter with a neat diagram. (K3)
15. Discuss (in detail) the capacitance transducer. (K3)
16. Describe the construction and working of U tube double column monometer. (K3)
17. Write the theory of piezoelectric accelerometer and its applications. (K3)
18. Write a short note on: (K4)
(i) Range and span (ii) calibration
(iii) Hysteresis (iv) Repeatability and reproducibility