(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2022-23 ONLY) **(NO. OF PAGES: 2)**

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REG.NO:

NGM COLLEGE (AUTONOMOUS) POLLACHI
END-OF-SEMESTER EXAMINATIONS: MAY - 2025
B.Sc. – PHYSICS **MAXIMUM MARKS: 50**
VI SEMESTER **TIME: 2 HOURS**

PART-IV: SKILL BASED ELECTIVE PAPER-II
ENVIRONMENTAL INSTRUMENTATION

SECTION – A **(10 X 1 = 10 MARKS)**

ANSWER ALL THE QUESTIONS.
MULTIPLE CHOICE QUESTIONS.

1. Thermocouple works on…… (K1)
   (a) Seebeck effect (b) Peltier effect
   (c) Thomson effect (d) Kelvin effect
2. Heat energy received by the earth from the sun is due to……. (K1)
   (a) Convection (b) Radiation
   (c) Transmission of light (d) Reflection of light
3. The measurement of _____ is made by placing a sample over the input port to the sphere. (K1)
   (a) Reflectivity (b) Transmissivity
   (c) Emissivity (d) None of the above
4. GM counter operates in the,…… (K1)
   (a) Proportional region (b) Geiger region
   (c) Saturation region (d) Recombination region
5. What type of pollution causes various diseases related to respiratory system? (K1)
   (a) Air pollution (b) Noise pollution
   (b) Water pollution (d) Soil pollution

SHORT ANSWER QUESTIONS.

6. Write down the ideal gas equation. (K2)
7. Pyrometer measures the temperature typically without direct contact (True or False). (K2)
8. Name the instruments that are employed for solar radiation measurements. (K2)
9. Give one example for Scintillation crystal. (K2)
10. Expand ppm (Unit for Pollution measurement). (K2)

(CONTD……..2)

ETHICAL PAPER

SECTION – B (5 X 8 = 40 MARKS)

ANSWER ANY FIVE.

11. Describe the temperature measurement by Mechanical effects. (K3)
12. Define blackbody radiation and describe the different radiation receiving elements. (K3)
13. What is pyrometer? Explain the theory of total radiation pyrometer. (K4)
14. What is emissivity? Discuss the measurement of emissivity with suitable diagram. (K3)
15. A Geiger-Muller counter has a plateau slope of 3% per 100 volts. If the operating point is at 1100 volts, what is the maximum permissible voltage fluctuation if the counting is not to be affected by more than 1/10 %? (K4)
16. Explain the construction and working of a Scintillation counter. (K3)
17. A black body is maintained at 25^{o}C and 925^{o}C. Calculate the ratio of emitted radiations. (Given Stefan – Boltzmann constant = 5.67 x 10-7 W m^{-2} K^{-4}) (K4)
18. Explain the various types of gas sampling techniques. (K4)

ETHICAL PAPER

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