

**NGM COLLEGE (AUTONOMOUS) POLLACHI**  
**END-OF-SEMESTER EXAMINATIONS: MAY - 2024**  
**B.Sc. – PHYSICS**  
**VI SEMESTER**  
**MAXIMUM MARKS: 50**  
**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. Mercury- in glass thermometers are generally applicable up to about ----- (K1)  
(a) 600°F (b) 700°F (c) 1000°F (d) 500°F
2. The infrared spectrum ranges from ..... (K1)  
(a) 0.22 m to 17 m (b) 0.32 m to 17 m (c) 0.52 m to 17 m (d) none of the above
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. The sensitivity of a typical BF3 detector is ---- per unit neutron flux. (K1)  
(a) 1.0 count/s (b) 2.0 count/s (c) 1.0 count (d) None of the above
5. A mixture of pyrogallic acid and solution of potassium hydroxide is employed as the reagent for absorption of ----  
(a) Carbon dioxide (b) Oxygen (c) sulfur dioxide (d) carbon monoxide

**SHORT ANSWER QUESTIONS**

6. What is thermistor? (K2)
7. Define bolometer. (K1)
8. What are the two types of instruments are employed for solar radiation measurements? (K2)
9. What do you mean by Scintillation crystal? (K2)
10. Expand ppm (Unit for Pollution measurement). (K1)

**SECTION – B**

**(5 X 8 = 40 MARKS)**

**ANSWER ANY FIVE.**

11. Discuss temperature measurement by Mechanical effects. (K3)
12. Define blackbody radiation and describe the different radiation receiving elements. (K3)
13. Explain the theory of total radiation pyrometer. (K4)
14. Explain how the emissivity is measured with a neat diagram. (K3)
15. Discuss in detail Detection of nuclear radiation. (K3)
16. Describe the construction and working measurements of Geiger - Muller counter. (K3)
17. Explain general air- sampling train. (K3)
18. Write about combustion product measurements using Orsat apparatus. (K4)