

SUBJECT CODE

19 UPS 6S5

REG.NO.

N.G.M.COLLEGE COLLEGE (AUTONOMOUS): POLLACHI

END-OF-SEMESTER EXAMINATIONS: JULY – 2022

B.Sc. – PHYSICS

MAXIMUM MARKS: 50

VI SEMESTER

TIME: 2 HOURS

PART IV

SKILL BASED ELECTIVE PAPER-2

ENVIRONMENTAL INSTRUMENTATION

SECTION - A

(10 X 1 = 10 MARKS)

ANSWER ALL THE QUESTIONS.

(K1)

MULTIPLE CHOICE QUESTIONS:

1. Mercury- in glass thermometers are generally applicable up to about -----
(a) 600 ° F (b) 500° F (c) 700° F (d) 400°F
2. The infrared spectrum ranges from -----
(a) 0.22 μm to 17 μ (b) 0.32 μm to 17 μm
(c) 0.52 μm to 17 μm (d) none of the above
3. The measurement of ----- is made by placing a sample over the input port to the sphere.
a) Reflectivity (b) Transmissivity
c) Emissivity (d) None of the above
4. The sensitivity of a typical BF₃ detector is ---- per unit neutron flux.
(a) 1.0 count/s (b) 2.0 count/s (c) 1.0 count (d) None of the above
5. A mixture of Pyrogalllic 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

(K2)

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

(2)

(19 UPS 6S5)

SECTION – B

(5 X 8 = 40 MARKS)

ANSWER ANY FIVE QUESTIONS OUT OF EIGHT QUESTIONS.

(K3)

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

