

CITY COLLEGE

Practical Examination 2020-2021

Physics (Gen.) CBCS Semester- III

Paper : GE3 (Thermal Physics and Statistical Mechanics-Practical)

Time : 1.5 hour

Full Marks : 30

Answer all the five questions given below : [5× 6 = 30]

1 (a) What is the principle of optical lever?

(b) Why should we keep the meter scale at a long distance from the mirror to determine the thermal expansion of a metallic rod using an optical lever ? (4 + 2)

2. (a) Why does the resistance of the filament increase with temperature in Stefan's law Experiment ?

(b) What is Draper point?

(c) Why don't we use ice point or steam point for the calibration of the filament ?

(2+2+2)

3. (a) What are the basic differences between the meter bridge and Carey-Foster bridge ?

(b) Does the value of α depend on the value of resistance chosen in the experiment of determination of Thermal coefficient of Resistance using Carey-Foster bridge ?

(c) What is the unit of α ? (3 + 2 + 1)

4. (a) Write down the working formula to find out the thermal conductivity of a bad conductor by Lees and Chorlton's method . What is the unit of thermal conductivity ?

(b) Why do we take the specimen in the form of a thin disc ? (3 + 1+ 2)

5. (a) Can an unknown temperature be found out by Jolly's apparatus arrangement ?

(b) Can any liquid other than mercury be used for the measurement of pressure in this experiment ? (3 + 3)