

GURUDAS COLLEGE  
PHSA 3rd Semester Practical Examination, 2020  
Paper CC7

Full Marks : 30

Time : 1 Hour

Answer All The Questions

1. What is a black body radiation ? What is Stefan's constant ? Describe and explain the set-up to determine the value of the constant using a lamp filament . Explain how the temperature of the filament can be determined without an extra thermometer .  

3+1+4+2
2. Explain how the maximum kinetic energy of the electrons emitted in the photoelectric effect can be experimentally determined . What is a photon ? Explain the concept of crystal momentum .  

6+2+2
3. Distinguish between direct gap and indirect gap semiconductors . Explain the process of light emission in a LED . Discuss whether Silicon can be used as a material for a LED ? Discuss how Planck's constant can be determined using a LED .  

2+4+2+2