

School of Basic Sciences

**Bachelor of Science Honours in Physics
Summer Term Examination – July - August 2024**

**Duration : 180 Minutes
Max Marks : 100**

Sem V - C1UD503T - Nanomaterials and Characterization Techniques*General Instructions**Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) Define hall effect. K1(2)
- 2) Illustrate Stokes and Anti-stokes lines. K2(4)
- 3) Shown through ray diagram the working of Scanning electron microscope. K2(6)
- 4) What is the difference between absorption and transmission spectroscopy? K3(9)
- 5) Explain quantum dots and give its applications. K3(9)
- 6) Distinguish between top-down and bottom -up approach of nanoparticle synthesis. K5(10)
- 7) Analyse the growth mechanism of synthesis of nanoparticles. K4(12)
- 8) Evaluate in detail, how TEM can be used to characterize the nano materials and nano structures. K5(15)
- 9) Define Graphene. How is it different from graphite. Discuss its properties and applications. K5(15)
- 10) Evaluate the optical properties of nano materials. Make a generic comparison of optical properties of graphene with those of graphite. K6(18)