**COURSE: BBS01T1002 SEMICONDUCTOR PHYSICS**

**(Unit-4)**

**ASSIGNMENT-4**

**Note:** Students of B. Tech. Sem-1 (Fall -2021-22) are advised to solve **any five questions ( at least two questions** from each section-A/B) .The Solutions of the following questions must be submitted at LMS on or before 02.02.2022 for your final grading.

**(Section -A)**

Q-1. Explain quantum well. quantum wire and quantum dots.

Q-2. Describe the 0D, 1D and 2D structure of Nanomaterials with examples.

Q-3. Explain the principle and working of Transmission Scanning Electron Microscope with suitable diagram).

Q-4. Name the corban allotropes and draw the structure of graphene.

Q-5. What do you mean by nanoscience and nanotechnology?

**(Section -B)**

Q-6. Describe basic principle of Scanning Electron Microscope (SEM) and its working.

Q-7. Discuss Carbon nanowires and nanotubes with their structures also explain their mechanical, electronic, and thermal properties.

Q-8. Draw the structure of graphene. Explain the electronic, optical, and mechanical properties of graphene and five uses.

Q-9. What are CNTs? Describe the single and multi-wall carbon nano tubes also discus synthesis of CNTs.

Q-10. Explain chiral vector and structures of corban nanotubes.