Vidyavardhini’s College of Engineering & Technology, Vasai (W)

First Year Engineering

Academic Year: 2024-25

Subject: BSC102/AP Assignment No-04 Date: 18/11/24

Max. Marks: 10 Duration: 1 Hr

CO:4: Learners will be able to relate the foundation of quantum mechanics with the development of modern technology.

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| Q. No | Questions | Marks | CO | CL |
| 1. | Explain de-Broglie hypothesis of matter waves and deduce the expression for wavelength. | 3 | 4 | 2 |
| 2. | Calculate de Broglie wavelength of an electron accelerated under the potential of 100 V0lts. | 2 | 4 | 3 |
| 3. | State and explain Heisenberg’s Uncertainty Principle. | 3 | 4 | 2 |
| 4. | Calculate the uncertainty in the position of electron, if the speed of an electron is measured to be 4 x 105 m/s to an accuracy of 0.002%. | 2 | 4 | 3 |