Maulana Azad National Institute of Technology, Bhopal

Department of Physics

Mini Test Examination, December 2022

B.Tech. I Sem (Section-B)

Subject: Physics **Subject code: PHY-102**

Time: 1 hr. **Max. Marks: 10**

Note: Answer all questions

Q. No.	Questions	Marks
Q.1	Derive the condition for maxima and minima in single slit diffraction.	03
Q.2	Define Fermi-Dirac distribution function? Derive the expression for concentration of electrons in an intrinsic semiconductor.	03
Q.3	Write the difference between interference and diffraction.	01
Q.4.	Light of wavelength 5000 Å falls normally on a plane transmission grating having 15000 line in 3cm. Find the angle of diffraction from maximum intensity in first order.	01
Q.5 i ii	In a double slit Fraunhofer diffraction, the screen is placed 170 cm away from the slits. The width of the slits is 0.08mm and they are 0.4mm apart. Calculate the wavelength of light if the fringe width is 0.25 cm. Also find the missing order.	02

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