

04/01/2021 16:10 – 16:55

National Institute of Technology Kurukshetra
B. Tech. PHIR-11, Sessional – I (all branches, Reappear)

All questions are compulsory

Time allotted: 45 min.

Max. Marks: 15

1	Calculate the percentage contraction of a rod moving with velocity $0.8c$ in a direction inclined at an angle 60° to its own length. Or Show that following wave functions are acceptable or not acceptable wave functions: (a) $\tan x$ (b) e^x (c) e^{-x} (d) $\operatorname{cosec} x$ (e) $\sin x$	5
2	State postulates of special theory of relativity and derived Lorentz transformation equations from them.	2+3
3	What is uncertainty principle? Discuss one application of uncertainty principle in detail. An electron has a de Broglie wavelength of 2×10^{-12} m. Find its kinetic energy.	1+2+2