

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATIONS- 2026

B.Tech-6<sup>th</sup> Semester (CSE/IT/BT/ECE/CE)

COURSE CODE (CREDITS): 23B1WHS632 (3)

MAX MARKS: 25

COURSE NAME: History and Philosophy of Science and Technology

COURSE INSTRUCTOR: Ranjith Kallyani

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is not allowed

Q.No	Question	CO	Marks
Q1	"Naïve Realism is not a fashionable view these days. Thanks to 'Fallibilism', philosophers and scientists generally accept Critical Realism these days." Justify this statement.	CO5	5
Q2	$\frac{\sin \theta_1}{\sin \theta_2} = \frac{v_1}{v_2}$ <p>According to Snell's Law, as provided above, the ratio of the sines of the angles of incidence <math>\theta_1</math> and angle of refraction <math>\theta_2</math> is equivalent to the ratio of phase velocities (<math>v_1 / v_2</math>) in the two media.</p> <p>All theories of light accepted since the 17<sup>th</sup> century contained a version of this law. This goes for Descartes' mechanistic optics, Newton's optics, Fresnel's wave theory of light, Maxwell's electrodynamics, as well as contemporary quantum optics. These different optical theories had drastically opposing views on the nature of light: some of these theories understood light as a string of corpuscles (particles), while other theories treated light as a wave-like entity, while yet others considered light as both corpuscular and wave-like. But despite these drastic changes in our understanding of the nature of light, the law of refraction has maintained its state in our mosaic.</p> <p>What can you deduce about Entity Realism and Structural Realism from this case?</p>	CO5	5
Q3	"All non-sciences are not pseudoscience whereas all pseudoscience are non-science." Defend this statement.	CO1	5
Q4	Both "No-Miracles Argument" and "Pessimistic Meta-Induction Argument" support the arguments in favour of scientific progress. Do you agree with this statement? Explain your reason.	CO4	10