BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)

CLASS: IMSc **SEMESTER : VI**
BRANCH: PHYSICS **SESSION : SP/2025**

SUBJECT: PH331 ASTRONOMY AND ASTROPHYSICS

FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	What are apparent and absolute magnitudes of a shining object? Derive a relation between them.	[5]	I	I
Q.1(b)	The ratio of fluxes from two objects is 145. The magnitude of brighter object is 1.2. Find the magnitude of other object.	[5]	I	I
Q.2(a)	Discuss in brief about the salient features of a telescope.	[5]	II	VI
Q.2(b)	State the Newton's law of gravitation, and develop it from Keplar's law of planetary motion.	[5]	II	VI
Q.3(a)	Discuss hydrostatic equilibrium inside a star.	[5]	III	VI
Q.3(b)	Explain the salient features of Hertzsprung-Russel diagram.	[5]	III	II
Q.4(a)	Outline in brief the classification of Galaxies.	[5]	IV	IV
Q.4(b)	What is Hubble's law? A galaxy has a red-shift z=0.02. What is it's distance if the Hubbles constant H_0 to be 20 km s^{-1}/Mly	[5]	IV	I
Q.5(a)	Discuss about the parallax method for determination of distance of Venus from the earth.	[5]	V	V
Q.5(b)	Describe the moving cluster method used for determination of distance of Hyades star cluster.	[5]	V	V

::::::29/04/2025::::::M