Name:

Enrolment No:



UPES

End Semester Examination, May 2023

Course: Astronomy & Astrophysics Semester: VI
Program: B.Sc (H) (Physics) Time: 03 hrs.

Course Code: PHYS 3013D Max. Marks: 100

Instructions: Read and follow all the instructions carefully:

1) All questions are compulsory (Q9 and Q11 have internal choice).

2) Scientific calculators can be used for calculations.

SECTION A (5Qx4M=20Marks)

	(3QA+1VI-201VIALKS)		
S. No.		Marks	CO
Q 1	Distinguish between Comets and Meteoroids.	4	CO1
Q 2	Match the following:		
	 i. Inner planet ii. Outer planet iii. Dwarf planet iv. Lightest (density) planet a. Saturn b. Pluto c. Mercury d. Neptune 	4	CO1
Q 3	Star Canopus has an apparent magnitude of -0.62 whilst the nearby star Wolf 359 has an apparent magnitude of 13.44. Which of them appears brighter on earth?	4	CO3
Q 4	What is Sidereal time?	4	CO1
Q 5	Photons of energy $6.0 \times 10^{-19} \text{ J}$ are determined to be the cause of transitions observed in a stellar spectrum. The frequency and wavelength of such photons are respectively. (Given $h = 6.626 \times 10^{-34} \text{ Js}$).	4	CO4
	SECTION B		•
	(4Qx10M= 40 Marks)		
Q 6	Elaborate on the 3 primary <i>powers</i> associated with optical telescopes?	10	CO2
Q 7	What are <i>main sequence</i> stars?	10	CO1
Q 8	Describe the Hubble's classification of galaxies.	10	CO2
Q 9	Describe the <i>Steady State Theory</i> of the universe. OR	10	CO2

	What is Cosmic Background Radiation? What is the temperature value associated with it?	7+3		
SECTION-C (2Qx20M=40 Marks)				
Q 10	From the studies made on our Sun, assemble the observations and construct its structure giving the different regions and their characteristics.	20	СОЗ	
Q 11	Describe the Nebular Theory of solar system formation, and appraise its ability to neatly explain almost all the observed features of our solar system. OR	20	CO4	
	Stars, like living beings, are born, evolve and then die! Analyze the life cycle of Sun like stars, considering the relevant underlying principles of physics.			