


Name:			
Enrolment No:			
UPES End Semester Examination, May 2023			
Course: Astronomical Techniques Program: M.Sc (Physics) Course Code: PHYS 7029P		Semester : II Time : 03 hrs. Max. Marks : 100	
Instructions: Read and follow all the instructions carefully: 1) All questions are compulsory (Q8 and Q11 have internal choice). 2) Scientific calculators can be used for calculations.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	What are <i>apparent magnitude</i> and <i>absolute magnitude</i> ?	4	CO2
Q 2	Match the closest in the following: i. Interferometry a. only transverse waves ii. Spectrometry b. all wave lengths iii. Polarimetry c. combining waves iv. Photometry d. individual wave lengths	4	CO1
Q 3	Why sunspots appear dark?	4	CO1
Q 4	List the different types of detection systems used with optical telescopes.	4	CO3
Q 5	What is <i>dark matter</i> ?	4	CO4
SECTION B (4Qx10M= 40 Marks)			
Q 6	What is LIGO in astronomy? Explain its working in detail.	10	CO2
Q 7	Write a short note on Hubble space telescope.	10	CO1
Q 8	Apprise how Photometry is used in astronomy. OR Appraise Astrometry (and its significance) in your own words.	10	CO1
Q 9	Write a short note on Virtual Observatory.	10	CO3
SECTION-C (2Qx20M=40 Marks)			

Q 10	Sun is not a homogenous burning ball of hydrogen! Reconstruct the structure of Sun from its center towards outside, analyzing the physical conditions that exist in different regions. Mention the salient features of each region.	20	CO4
Q 11	What are the different types of optical telescopes? Analyze the structure and working of an optical telescope. <u>OR</u> What is a Radio telescope? Analyze its working in detail.	3+17	CO1