U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

April 2025 Semester End Make-Up Examinations

Programme: B.E. **Semester: VII**

Branch: Common to all Branches **Duration: 3 hrs.**

Course Code: 24PY7OEAPS **Max Marks: 100**

Course: Astrophysics and Space Science

Instructions: 1. Answer any FIVE full questions, choosing one full question from each module.

2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		MODULE - I	CO	PO	Marks
1	a)	Discuss in detail the Ptolemy's astronomical work which elucidates the geocentric model of the universe.	CO1	PO1	**10**
	b)	Mention and explain in detail the types of time systems.	CO1	PO1	**10**
		OR			
2	a)	What is celestial sphere? With neat sketch describe the equatorial coordinate system.	CO1	PO1	**10**
	b)	Explain the heliocentric parallax method to measure the astronomical distances. Define the terms astronomical Module, light year and parsec. Write their relation.	CO1	PO1	**10**
		MODULE - II			
3	a)	What are absolute magnitude and distance modulus? Obtain the relation between them.	CO1	PO1	**10**
	b)	Explain the Pickering method of stellar classification in detail. Also mention the drawbacks of this classification.	CO1	PO1	**10**
		OR			
4	a)	Mention the methods of luminosity measurement. With neat sketch of photoelectric photometer, illustrate the photoelectric method of luminosity measurement.	CO1	PO1	**10**
	b)	Explain the Hertzsprung-Russell (H-R) diagram and its significance in stellar astrophysics.	CO1	PO1	**10**
		MODULE - III			
5	a)	With necessary diagram explain the internal structure and atmosphere of the Sun.	CO1	PO1	**10**
	b)	What is solar eclipse? With suitable drawing discuss the types, condition for occurrence of solar eclipses.	CO1	PO1	**10**

			OR			
	6	a)	What are solar flares? Explain the causes, formation and types of solar flares. Also discuss the impact of solar flares on space and earth-based systems.	CO1	PO1	**10**
		b)	Explain in brief the role of telescopes in the exploration of solar system. Describe the types, key discoveries and contributions from telescopic observations. Also mention the challenges in solar system exploration via telescopes.	CO1	PO1	**10**
			MODULE - IV			
	7	a)	With necessary diagram explain the structure of earth's atmosphere.	CO1	PO1	**10**
		b)	What is ionosphere? Describe the significant characteristics of ionosphere and layers of the ionosphere. Also discuss its role in communication and protection of planet from solar radiation.	CO1	PO1	**10**
			OR			
	8	a)	What is troposphere? Explain the lower, middle and upper troposphere in detail.	CO1	PO1	**10**
		b)	With a neat diagram explain the origin of earth's magnetic field and its key role in protecting the planet from space weather.	CO1	PO1	**10**
			MODULE - V			
	9	a)	What are optical telescopes? Mention their types. Explain the general properties of telescopes.	CO2	PO1	**10**
		b)	What are the advantages and challenges in using gamma ray telescopes? Explain the types in detail with examples.	CO2	PO1	
			OR			
	10	a)	Mention the characteristics of the reflecting telescopes. With neat schematic of the optical systems explain the different focus of the reflecting telescopes.	CO2	PO1	**10**
		b)	Describe the equatorial and altazimuth mountings of telescopes with necessary diagrams.	CO2	PO1	**10**

****