22PHU101N / 22PHU101

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2024
(First Semester)

Branch – **PHYSICS**

ASTROPHYSICS AND PHILOSOPHY OF PHYSICS

Time: Three Hours Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Who was Nikola Tesla's first employer in New York? a. Robert Lane b.Benjamin c. Thomas Alva Edison d.Michel faraday	K1	CO1
	2	Kepler's first law also known as a. Gravitation law b. Law of ellipse c. Planetary motion law d. The law of equal area	K2	CO1
2	3	Which of the following star has brightness 13 billion times of Sirius? a. Sun b.Orion c. Alpha Centauri d.Neutron star	K1	CO2
	4	The longitudes and latitudes of places on the surface of the earth represent a. Polar coordinates b. spherical coordinates c. non-polar coordinates d. coordinates	K2	CO2
3	5	What is the distance traveled by the light in a year? a. $3x10^{10}$ cm/s b.$3.15x10^{17}$ m c. $9.46x10^{17}$ cm d.$9.46x10^{19}$ km	K1	CO3
	6	The distance traveled by the sun in one year is ____ a. $9.1x10^{8}$ km b.$6.1x10^{10}$ km c. $6.1x10^{10}$ km d.$9.46x10^{8}$ km	K2	CO3
4	7	Asteroids are also known as ___ a. Minor planets b.Planets c. Stars d.Rocky bodies	K1	CO4
	8	The surface temperature of the sun is around ___ a. 5505 K b.5778 K c. 9941 K d.$2.7x10^{7}$ K	K2	CO4
5	9	Which of the following belongs to the Harvard system? a. Surface temperature of stars b. Surface temperature of planets c. Luminosity of stars d. Luminosity of planets	K1	CO5
	10	The accepted value of the Chandrasekhar limit is about _____ a. 1.34 M b.0.14 M c. 1.31 M d.1.4 M	K2	CO5

Cont...

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	List some contributions of Newton to the scientific revolution.	K4	CO1
		(OR)		
	11.b.	Analyze Richard Feynman's contribution to the current physics revolution.		
2	12.a.	Measure the distance between celestial bodies by applying the Altazimuth system.	K5	CO2
		(OR)		
	12.b.	Determine the luminosity of the sun and Sirius make use of the concept of absolute magnitude.		
3	13.a.	How can we measure the distance between the Earth and the moon?	K1	CO3
		(OR)		
	13.b.	Find the luminosity distance using the concept of absolute magnitude.		
4	14.a.	Explain about refracting telescope with a suitable diagram.	K2	CO4
		(OR)		
	14.b.	Outline about comets.		
5	15.a.	Find the gravitational potential energy of a star using the Viral theorem.	K1	CO5
		(OR)		
	15.b.	Define Schönberg-Chandrasekhar limit.		

SECTION -C (30 Marks)

Answer **ANY THREE** questions

ALL questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Elaborate the contribution of Indian physicists in scientific resolution.	K6	CO1
2	17	Explain how the apparent luminosity is measured using various methods.	K2	CO2
3	18	Classify the methods used to determine the stellar distance and find the distance between the earth and cluster stars using the clusters parallax geometrical method.	K2	CO3
4	19	Define and relate the Big Bang theory and the Milky Way.	K1	CO4
5	20	Interpret the Eddington standard model to find the mass of sun.	K5	CO5

Z-Z-Z END