

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – MATHEMATICS

FOURTH SEMESTER – APRIL 2022

UMT 4602 – ASTRONOMY

Date: 23-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

Answer all the Questions:

(10 × 2 = 20)

1. Define Zenith and Nadir.
2. Define Secondaries.
3. Write the laws of refraction.
4. Define perigee and apogee.
5. Define umbra and penumbra.
6. Define Ecliptic limits.
7. What are binary stars?
8. What are stars made of?
9. Define Constellations of stars
10. Define Nebulae.

PART – B

Answer any Five of the following:

(5 × 8 = 40)

11. What are the points to be remembered while drawing an astronomical diagram in a celestial sphere?
12. Explain the variation in the duration of day and night during the year at
 - i.) A place in equator
 - ii.) A place in North torrid Zone.
13. Derive Cassini's formula for refraction.
14. Derive tangential formula for refraction.
15. Explain briefly about the surface structure of the moon.
16. Find the minimum number of eclipses that can occur in a year.
17. Explain briefly about the birth of a solar system.
18. Explain briefly about Star Clusters.

PART – C

Answer any Two of the following:

(2 × 20 = 40)

19. Explain in detail about the four systems of co-ordinates used to fix the positions of anybody in the celestial sphere.
20. Explain in detail about the Newton's deduction from Kepler's laws.
21. Explain briefly about solar and lunar eclipse.
22. Write a short note on Variable Stars.

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