

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc. DEGREE EXAMINATION – MATHEMATICS

THIRD SEMESTER – NOVEMBER 2018

MT 3502 – ASTRONOMY

Date: 31-10-2018

Dept. No.

Max. : 100 Marks

Time: 01:00-04:00

PART - A

ANSWER ALL QUESTIONS:

(10 X 2 = 20)

1. What are cardinal points?
2. Define first point of Aries and first point of Libra.
3. Define Aberration of a celestial body.
4. What is a sidereal clock?
5. Define sidereal year.
6. State Kepler's laws of planetary motion.
7. Define an umbra.
8. Prove that one eclipse must occur near a node.
9. What are the chief elements present in sun?
10. Define the term 'comets'.

PART – B

ANSWER ANY FIVE QUESTIONS:

(5 X 8 = 40)

11. Define 'Dip of Horizon' and derive an expression for the same. List down the effects of dip.
12. Trace the variations in the duration of day and night in a place of latitude 5N.
13. Derive the tangent formula for refraction.
14. Define geocentric parallax of a body and derive an expression for it.
15. What are Astronomical seasons? Find their duration.
16. Give a brief description of the surface structure of moon.
17. Explain how solar and lunar eclipses are caused?
18. Define sidereal and synodic months and find the relation between them.

PART – C

ANSWER ANY TWO QUESTIONS:

(2 X 20 = 40)

19. Explain the four system of celestial co – ordinates to fix the position of a body in the celestial sphere.
20. (i) Explain any one astronomical instrument with a neat diagram.

(ii) Prove that the latitude of a place is equal to the altitude of the celestial pole. (10+10)

21. (i) Describe the successive phases of moon with a neat diagram.

(ii) Derive Cassini's formula for refraction. (10+10)

22. (i) Describe any two planets of the solar system.

(ii) Write a short note on Asteroids. (10+10)

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