LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

**B.Sc.** DEGREE EXAMINATION – **MATHEMATICS**

THIRD SEMESTER – NOVEMBER 2012

# MT 3502/5503 - ASTRONOMY

Date : 05/11/2012 Dept. No. Max. : 100 Marks

Time : 9:00 - 12:00

**PART - A**

**Answer all questions: (10 x 2 = 20)**

1. What are cardinal points?
2. Define Zenith and Nadir.
3. Define Aberration of a celestial body.
4. What is the use of a Gnomon?
5. Define sidereal year.
6. Define dynamical mean sun.
7. Define an umbra.
8. What is Harvest Moon?
9. What are the chief elements present in sun?
10. Define chromosphere.

**PART – B**

**Answer any five questions: (5 X 8 = 40)**

1. Write a note on the equatorial system of coordinates.
2. Trace the variations in the duration of day and night in a place of latitude 5N.
3. Derive the tangent formula for refraction.
4. Find an analytical expression for the equation of time.
5. What are Astronomical seasons? Find their duration.
6. Give a brief description of the surface structure of moon.
7. Explain how solar and lunar eclipses are caused?
8. Write a note on comets.

**PART – C**

**Answer any two questions: (2 X 20 = 40)**

1. (i) What is Twilight? Find the number of days that twilight may last throughout night

in a given place.

(ii) Write a note on Morning stars, Evening stars and Circumpolar stars.

1. (i) Explain any one astronomical instrument with a neat diagram.

(ii) Write a note on the different types of Calendar.

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

(ii) Find the maximum number of eclipses possible in a year.

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

(ii) Write a note on any four constellations visible over Chennai.

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