LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

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

FIFTH SEMESTER – **NOVEMBER 2019**

16/17UMT5ES02 – ASTRONOMY

Date: 06-11-2019   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

PART – A

Answer ALL the questions.   **(2 x 10 = 20)**

1. Define cardinal points.
2. What is secondary of the circle? Draw a secondary to the horizon.
3. State the laws of refraction.
4. Define heliocentric parallax.
5. State Kepler's first and second law.
6. Define perihelion and aphelion.
7. What is lunar eclipse? Illustrate with diagram.
8. Define harvest moon.
9. What are asteroids?
10. Define constellations.

PART –B

Answer any FIVE of the following questions.   **(5 x 8 = 40)**

11. Draw a diagram of the celestial sphere as seen at a place with latitude 8° 30` N on the 10th April at 8 pm. Show the position of the sun and the moon aged 7 days.
12. Write about the seasons of the earth and explain its occurrence.
13. Explain briefly about the variations of day and night during the year at a place (North Frigid zone) with latitude $> 90° - $. (represents obliquity)
14. Define geocentric parallax and deduce the equation of geocentric parallax.
15. Derive Newton's deductions from Kepler's laws.
16. Find the maximum number of eclipses that can occur in a year.
17. Explain about the characteristics of the sun.
18. Write a note on meteors.

PART –C

Answer any TWO of the following questions.   **(2 x 20 = 40)**

19. Explain briefly any three celestial coordinate systems with diagram.
20. Describe telescope with its principle of working.
21. Explain solar eclipse and lunar eclipse in detail.
22. Discuss the different phases of moon.

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1