

Exam Date & Time: 29-Sep-2020 (10:00 AM - 01:45 PM)



PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins

BSc DEGREE EXAMINATION MAY 2020
(Sixth Semester)

Branch - MATHEMATICS
ASTRONOMY [14MAU21]

Marks: 75

Duration: 210 mins.

SECTION A

Answer all the questions.

- 1) Define Secondaries. (2)
- 2) Define Dip of horizon. (2)
- 3) What do you mean by perpetual day? (2)
- 4) Find the acceleration in the time of rising of a body due to refraction. (2)
- 5) Define Parallax. (2)
- 6) What do you mean by one parsec and light year? (2)
- 7) State Kepler's law of planetary motion. (2)
- 8) Define equation of time. (2)
- 9) What do you mean by elongation? (2)
- 10) Define Harvest moon. (2)

SECTION B

Answer all the questions.

- 11) Describe the Equatorial system of Co-ordinates used to fix the position of any body in the celestial sphere. (5)
 - a) (5)
- [OR] Find an expression for Dip of Horizon. (5)
 - b)

- 12) Find analytically the conditions for perpetual day and night. (5)
- a)
[OR] Obtain the tangent formula for refraction. (5)
b)
- 13) Find the changes in R.A and declination of a body due to geocentric parallax. (5)
- a)
[OR] Determine the constant of aberration. (5)
b)
- 14) Calculate the eccentricity of the earth's orbit around the sun. (5)
- a)
[OR] Prove that the equation of time vanishes four times a year. (5)
b)
- 15) What is meant by phase of moon? Find a formula for it in terms of moon's elongation. (5)
- a)
[OR] Find the condition for the occurrence of a lunar eclipse. (5)
b)

SECTION C

Answer 3 out of 5 questions.

- 16) Trace the changes in the azimuth of a star in the course of a day. (10)
- 17) Derive Cassini's formula for refraction. (10)
- 18) Find the effect of heliocentric parallax on the longitude and latitude of a star. (10)
- 19) Derive Kepler's Law. (10)
- 20) Define: (i) Opposition (ii) Conjugation (iii) Earth Shine (iv) Metonic Cycle (v) Epoch. (10)

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