Unit - III / FkeâeF - III 7½

6 Show that at most 7 eclipses can occur during a year,5 solar and 2 lunar or 4 solar and 3 lunar.

emeæ keâeepeS ekeâ Skeâ Je<e ce DeeOekeâeeOekeâ 7 «enCe he[mekeâle n, 5 meÙe SJe 2 Üevõcee keâ DeLeJee 4 meÙe Deej 3 Üevõcee keâ~

7. Derive a formula for finding the precession in right ascension and declination.

eJemeJeeMe SJe ›eâeevle ce DeÙeve evekeâeueve me$e %eele keâeepeS~

Unit - IV / FkeâeF - IV 7½

8. Explain the proper motion of a star. obtain expressions for finding the parallactic motion in right ascension and declination.

leej keâe evepee ieele keâe mecePeeFS~eJemeJee SJe ›eâeevle ce hejueekeškeâ ieele keâe %eele keâjve keâ me$e JÙelheVe keâeepeS~

9. Discuss Zwier's graphical method.

epeDej «eeheâeÙe eJeeOe keâe JeCeve keâeepeS~

A (Printed Pages 4)

S-690

B.Sc. (Part II) Examination, 2015

(Regular & Exempted)

ASTRONOMY

First-Paper

(Spherical Astronomy)

Time : Three Hours] ***[Maximum Marks : 50***

Note : Answer five questions in all. Question No. 1 is compulsory. Attempt one question from each unit.

keâue heeÜe ØeMvee keâ Gòej oeepeS~ ØeMve me. 1 DeeveJeeÙe n~ ØelÙekeâ FkeâeF me Skeâ ØeMve keâeepeS~

1. Answer all parts : 2×10=20

meYee KeC[e keâ Gòej oeepeS :

(a) The star 'α -Lyrae has a parallax of 0''.26 Find its distance

(i) in parsec

(ii) in light years.

i ve#e$e 'α -ueeFj' keâe uecyeve 0''.26 n~ Fme ve#e$e keâe oje %eele keâeepeS~

(i) heejmekeâ ce

(ii) ØekeâeMe Je<e ce

(b) What do you understand occultation of stars?

ve#e$ee keâ «enCe me Deehe keÙee mecePele n?

(c) Explain the binary stars.

Ùeice leeje keâe mecePeeFS~

(d) Define total lunar eclipse.

heCe Ûevõ «enCe keâe mecePeeFS~

(e) Write the Besselian elements of an occultation.

ve#e$e «enCe keâ eueS yemeeueÙeve DeJeÙeJe eueeKeS~

(f) Write a brief note on Zenith Telescope.

(g) Explain parallactic ellipse.

hejeueekeŠkeâ oeleJele keâe mecePeeFS~

(h) Define independent day numbers and show how they are used.

FeC[he[Š [vecyeme me Deehe keÙee mecePele n ? mecePeeFS ekeâ Fvekeâe GheÙeeie keâme nelee n~

(i) What do you understand by diurnal aberration?

oevekeâ eJeheLeve me Deehe keÙee mecePele n?

(j) What do you understand by precession of equinoxes?

eJe<eJee keâ hejmmejCe me Deehe keÙee mecePele n~

Unit - I / FkeâeF - I 7½

2. Obtain a formula for finding the stellar parallax in longitude & latitude.

oMeevlej SJe De#eeMe ce leeje-uecyeve %eele keâjve keâe me$e %eele keâeepeS~

3. Show that parallax in declination of a planet ovserved from a place with latitude ϕ vanishes if.

$$\tan \phi = \tan \delta \cos H$$

Where δ and H being planets declination and hour angle respectively.

Ùeeo ϕ De#eeMe keâ mLeeve me oKeve hej ekeâmee «en keâe ›eâeevle ce uecyeve MevÙe ne,lee eoKeeFS ekeâ :

$$\tan \phi = \tan \delta \cos H$$

pene δ SJe H ›eâceMe: «en keâ ›eâeevle SJe leje keâe<e n~

Unit - II / FkeâeF - II 7½

4. Show that abarration varies as the sine of the earth's way.

oMeeFS ekeâ eJeheLeve 'meeFve Deeheâ o DeLme Je' keâ meceeveheelee nelee n~

5. Find the formula for finding the oberration in longitude and latitude.

oMeevlej SJe De#eeMe ce eJeheLeve %eele keâjve keâ me$e %eele keâeepeS~