Your Roll No. .....

UNIVERSITY OF DELHI

Department of Physics & Astrophysics

M. Sc. (Physics), III Semester

PHYS-555 (Astronomy & Astrophysics-I)

Internal Assessment-2012

Max Marks:30 Time:1hr 30mins

1. (a) For a given latitude, (φ) in the northern hemisphere, find the minimum declination, (δ) for a star to be circumpolar? 5

   (b) What are the duration of day and night at the North Pole? Explain with diagram. 3

2. The distance between components of a binary star is 1.5 arc-sec.

   (a) If you are observing the star at optical wavelength 550nm, what should be the diameter of the objective of the telescope to resolve them? 4

   (b) If the focal length of the objective is 100cm, what should be the focal length of eyepiece to resolve them? (assume the resolution of eye to be 2 arc-min). 4

3. The RA and Dec of two stars in the sky are given as α_1 =6h and δ_1=60^0 & α_2 =8h and δ_2=80^0. Find the angular distance between them. 7

4. The magnitudes of two components of a binary star are +1 and +3. What is the total magnitude of the binary, if the components are not eclipsing each other? 7