

2. (a) Compare between comets and asteroids. (3)  
(b) Define parallax. Deduce the relation between parallax angle and distance of a celestial body. (2+2)  
(c) The parallax shift of the star, Sirius, is measured to be  $p = 0.38$  arcseconds. Find its distance from the Earth. (2)  
(d) What is 1 astronomical unit? (1)
3. (a) Write short notes on (any Three): (3X3)  
Hertzsprung-Russell diagram, Milky Way Galaxy, Solar wind, Wave-particle nature of light, Orion Constellation  
(b) Express 1 parsec into the unit of mile. (1)
- 4(a) Discuss the lunar and solar eclipses in details with diagram. (3+4)  
(b) Explain the origin of solar energy. (2)  
(c) What is the location of the asteroid belt in the solar system? (1)
- 5(a) Mention the types of Galaxies and write briefly on these types? (2+3)  
(b) What are the terrestrial and gas giant planets? Explain how they are formed? (2+3)
6. What is Doppler effect? Discuss Red shift and Blue shift when light source is moving. What is telescope? Compare refracting and reflecting telescopes. (2+3+2+3)

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**Internal Assessment-10**

2017

M. Sc.

3<sup>rd</sup> Semester Examination

PHYSICS

PAPER – PHS-304

Full Marks : 50

Time : 2 Hours

(Science of Universe – PHS 304)

Answer Q1 and any three from the rest

1. Answer any five bits: 5X2 = 10
- (a) What are Bok globules and Cocoon star?  
(b) What is Chandrashekhar Limit?  
(c) What is ratio of the gravitational force of the Sun on the Earth to the gravitational force of the Moon on the Earth? Given, respective masses of the Moon and the Sun are  $7.35 \times 10^{22}$  kg and  $2 \times 10^{30}$  kg. Distances of the Moon and the Sun from the Earth are  $3.84 \times 10^8$  m and  $1.5 \times 10^{11}$  m, respectively.  
(d) Define: meteoroid and meteor.  
(e) If the distance of a star from the Earth is doubled, in what amount the intensity of starlight to be arrived at the Earth's surface will change?  
(f) What is red giant?  
(g) State Kepler's law of planetary motion.  
(h) What are Sunspots?

(Turn Over)