ASSIGNMENT
B.Sc.6th Semester 2020
Mathematics (Major)
Paper:MM 604 : Space Dynamics and Relativity

Date: Sept, 2020   Due date-   Max mark: 20

All questions are compulsory

1. (a) For a Spherical triangle ABC, Prove that

$$\sin C \cos B = \sin a \cos b - \cos a \sin b \cos C$$

(3)

   (b) In a spherical triangle ABC if C be a right angle and D the middle point of AB , Show that

$$\cos^2 \frac{1}{2} C \sin^2 CD = \sin^2 a + \sin^2 b$$

(4)

2. (a) Show that the right ascension α and the declination δ of the sum will always be connected by the equation

$$\tan \delta = \tan \epsilon \sin \alpha$$

(4)

   (b) Write short notes on
   - Vernal equinox
   - summer solstice

(2)

3. (a) Write short notes on
   - Length Contraction
   - Time Dilation

   (2)

   (b) Deduce the transformation formula for momentum and energy **(5)**

Best wishes