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**PG CBCS**  
**M.A./M.SC. Semester-II Examination, 2022**  
**DEPARTMENT OF GEOGRAPHY**  
 PAPER: GEO 496  
**(GEODESY AND GIS)**

Full Marks: 50

Time: 4 Hours

The figures in the right-hand margin indicate full marks.

Attempt all the following questions.

**WRITE THE ANSWER FOR EACH UNIT IN SEPARATE SHEET****GEO 496.1****MAP TRANSFORMATION AND GEODESY****Full Marks: 25**

1. Draw the graticule of Simple Conical Projection with Two Standard Parallels for the extension of  $20^{\circ}$  N to  $80^{\circ}$  N and  $70^{\circ}$  W to  $130^{\circ}$  W at an interval of  $10^{\circ}$  and on a scale of 1:80,000,000. 1×7=7
2. Answer the following questions. 3+2+2=7
- a) Write down the properties and limitations of Mercator's projection.  
 b) Differentiate RSF from TSF.  
 c) What is the role of map projection in GIS?
3. Answer the following questions. 2×3=6
- a) How can you calculate Euclidean distance on a spherical coordinate system?  
 b) Convert from spherical to rectangular coordinates:  $(2, \frac{\pi}{6}, \pi)$   
 c) Identify the UTM zone: LATITUDE = 26.281742N; LONGITUDE = 92.142683E
4. Laboratory Note Book and Viva-Voce. 5

**GEO 496.2****GEOGRAPHICAL INFORMATION SYSTEM (GIS)****Full Marks: 25**

1. Describe vector and raster data structure with suitable examples. 1×7=7
2. Discuss about modern trends in GIS and how it helps our people and society. 1×7=7
3. Answer the following questions. 2×3=6
- a) What do you mean by real time GIS?  
 b) What is meant by space segment?  
 c) What is GNSS?
4. Laboratory Note Book and Viva-Voce. 5

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