

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2011 Onwards) (Sem.-4)

GEOMATICS ENGINEERING

Subject Code : BTCE-401

Paper ID : [A1171]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt **ANY FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt **ANY TWO** questions.

SECTION-A

Q1 Answer briefly :

- a) What is the principle of terrestrial photogrammetry?
- b) Name various components of stereoscopic plotting instruments.
- c) How is the horizontal angle measurement made with the help of Total Station?
- d) Draw schematic diagram of geodimeter.
- e) Define crab and drift.
- f) Define GIS.
- g) Name various data input methods in GIS.
- h) What are the various sources of error in GIS?
- i) Draw a schematic diagram of Generic GPS receiver.
- j) How are GPS satellite ephemerides computed?

SECTION B

- Q2 Describe with sketches the field work of a survey with phototheodolite. Explain how you would plot the survey.
- Q3 Explain the interaction mechanism of EM radiation with earth's surface, stating the basic interaction equation.
- Q4 Explain various components of GIS.
- Q5 Briefly explain the applications of remote sensing in various areas.
- Q6 Why is the GPS signal so complicated?

SECTION C

- Q7 An area 30km long in the north south direction and 24 km in the east west direction is to be photographed with a lens having 30cm focal length for the purpose of constructing a mosaic. The photograph size is 20cm $\times$ 20cm. The average scale is to be 1: 12000 effective at an elevation of 400m above the datum. Overlap is to be at least 60% and the side lap is to be at least 30%. An intervalometer will be used to control the interval between exposures. The ground speed of aircraft will be maintained at 200 km/h. The flight lines are to be laid in the north south direction on an existing map having a scale of 1: 60000. The two outer flight lines are to coincide with the east and west boundaries of the area. Determine the data for the flight plan.
- Q8 Explain in detail various models of Distomats.
- Q9 Explain various types of Vector GIS Models.