

Roll No.

Total Pages : 3

002505

December 2023

B.Tech. (Civil)-Vth SEMESTER

Geomatics Engineering (PCC -CED305)

Time : 3 Hours]

[Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What are fiducial marks explain with diagrams? (1.5)
(b) What are the components of GIS? (1.5)
(c) List out the segments of GPS along with their working areas. (1.5)
(d) What is meant by spatial and attribute data? (1.5)
(e) What do you mean by datum and average scale? (1.5)
(f) What are the basic functions of GPS? (1.5)
(g) What is the principle of stereoscopy? (1.5)

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- (h) List out the necessity of integration with respect to GIS. (1.5)
- (i) Write down the applications of Digital image processing? (1.5)
- (j) What is the working principle of GIS? (1.5)

PART-B

2. (a) What is photogrammetry? Briefly explain the construction and uses of photo-theodolite? (7)
- (b) Explain the fundamental of stereoscopy and stereoscopic parallax. (8)
3. (a) What is digital image processing and explain its various types? (7)
- (b) What do you mean by visual interpretation? Explain the factors affecting visual interpretation? (8)
4. The ground length of a line AB is known to be 545 dm (decimeter) and the elevations of A and B respectively 500 dm and 300 dm above M.S.L. On a vertical photograph taken with a camera having focal length of 20 cm include the images a and b of their photographic co-ordinates are:
 $(x_a = +2.65 \text{ cm}, y_a = +1.36 \text{ cm}); (x_b = -1.92 \text{ cm}, y_b = +3.5 \text{ cm})$
The distance ab scaled directly from the photograph is 5.112cm. Compute the flying height above the mean sea level. (15)

5. (a) Explain the process of remote sensing with labelled diagrams. (8)
- (b) Explain in brief – EMR and EMS and also explain the sources of Electromagnetic Radiation. (7)
6. (a) Explain in detail the working principle of GPS and how the position is calculated using different satellites. (8)
- (b) What are visibility diagrams and briefly explain the working and components of GAGAN. (7)
7. (a) Draw a flowchart showing the GIS data analysis by spatial data? (8)
- (b) Explain in detail the various models of integration? (7)