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Roll No. ....

**CC-722**

**M. Tech. EXAMINATION, Dec. 2017**

(Third Semester)

(Main & Re-appear)

CE(HSE)

CEH-603

GIS IN HIGHWAY ENGINEERING

*Time : 3 Hours]*

*[Maximum Marks : 75*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

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**P.T.O.**

### Unit I

1. (a) Explain process of remote sensing. Explain advantages and limitation of remote sensing. 7  
(b) What is FCC ? What are the advantages of FCC ? 8
2. (a) What are the various image pre-processing techniques ? Explain in brief. 8  
(b) Give detailed classification of sensors. 7

### Unit II

3. (a) What is GIS ? Explain various advantages of GIS over convention method. 6  
(b) What are Raster and Vector Data Format ? Illustrate difference between Raster and Vector Data. 9
4. Explain the working of GPS. State difference between static and differential GPS. 15

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### Unit III

5. (a) Explain various processes involve in implementation of GIS. 7  
(b) Analyze the relationship between benefit and cost for a GIS. 8
6. Write short notes on the following : 15  
(a) Communication Management  
(b) Key element for unsuccessful GIS.

### Unit IV

7. Write short notes on application of GIS in :  
(a) Highway alignment  
(b) Road network planning. 15
8. Explain how GIS is used in EIA. Explain Overlay method of GIS. 15

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