GIS & REMOTE SENSING (SEMESTER - 8)

CS/B.Tech(CSE)/SEM-8/CS-802C/09

1. ..... *Signature of Invigilator*

2. ..... *Signature of the Officer-in-Charge*

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/B.Tech(CSE)/SEM-8/CS-802C/09

ENGINEERING & MANAGEMENT EXAMINATIONS, APRIL – 2009

GIS & REMOTE SENSING (SEMESTER - 8)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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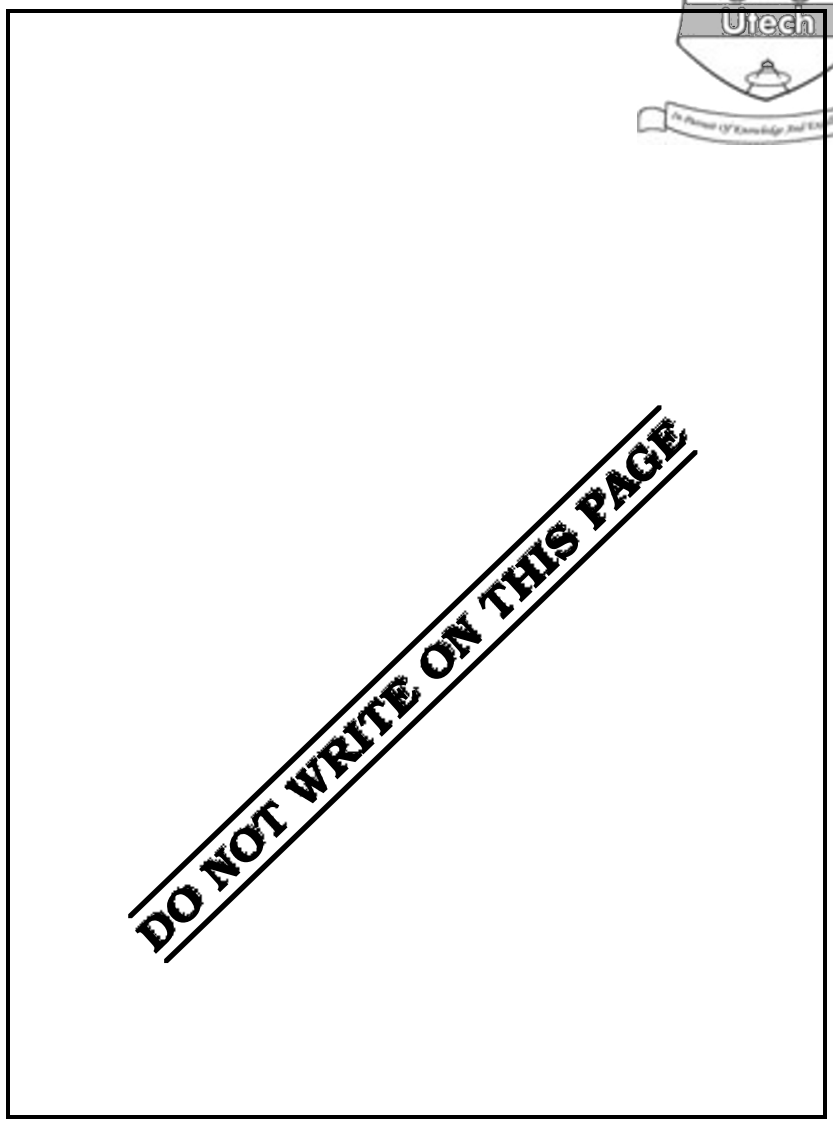
Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

.....

Head-Examiner/Co-Ordinator/Scrutineer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GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : 10 × 1 = 10

i) GIS is a package consisting four basic parts that is

a) Hardware, Software, Data and Thinking Operator

b) Hardware, Software, Information and Thinking Operator

c) Hardware, Software, Data and Data capturing Operator

d) Hardware, Software, Data and Sensor. ☐

ii) The small DEM has a cell size of 30 ∞ 30 m, an area of 6.04 km^2 , a minimum elevation is

a) 160 m b) 175 m

c) 677.5 m d) 170 m. ☐

iii) The satellite sensor used in rainfall and its effect on vegetation analysis is the advanced very high resolution radiometer (AVHRR), which detects the amounts of energy reflected from the earth's surface at a ..... kilometre resolution twice a day.

a) 2 b) 3

c) 1 d) none of these. ☐

iv) Which one is not related to GIS thematic map ?

a) Choropleth map b) Area class map

c) Isopleth map d) Topographic map. ☐

v) UTM stands for

a) Unit Transverse Mercator

b) Universal Transverse Measurement

c) Universal Transverse Mercator

d) Universal Traverse Mercator. ☐

vi) Components of a remote sensing system are

a) target, energy source and transmission

b) target, energy source and sensor

c) target, source and transmission

d) none of these. ☐

vii) *L*-systems are based on

a) Writing b) Rewriting

c) Repeat d) Reverse. ☐

viii) LiDAR (Light Detection and Ranging) measures

a) *x*, *y*, *z* and reflection b) *x*, *y*, *z* only

c) *x*, *y*, *z* and intensity d) none of these. ☐

ix) Map projections are a mathematical transformation that convert into

a) 2D to 3D map b) 3D to 2D map

c) 3D to 3D map d) 2D to 2D map. ☐

x) Geolibrary is a digital library filled with the information related to

a) all types of information b) bioinformation

c) chemical information d) geoinformation. ☐

GROUP – B

(Short Answer Type Questions)

Write short notes on any *three* of the following. 3 × 5 = 15

2. GIS applications in public health.

3. Data quality inference.

4. MyGRID

5. How to work remote sensing in environment.

6. Thermal Infrared Remote Sensing.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) Discuss the limitations that computer coding imposes on spatial data structuring.

b) Why are database management systems so important ? What are there main functions ?

c) Why is it important for the user to be aware of the database structure when using a GIS ?

d) How many types of coordinate system are used in GIS ? Discuss each of them briefly. 4 + (2 + 2) + 4 + (1 + 2)

8. a) Write down alternative definitions of Geographical Information Systems.

b) Describe the different components of a Geographical Information Systems.

c) Write down the several functions of Geographical Information Systems.

d) Compare and contrast between GIS and Cartography.

e) What are the advantages and limitations of Geographical Information Systems ?

2 + 3 + 3 + 4 + 3

9. a) Briefly discuss the use of remote sensing in GIS.

b) How to calculate the reflected radiation by remote sensing ? (Make suitable assumptions)

c) Discuss about remote sensing for vegetation and water. 2 + 3 + (5 + 5)

10. a) Write down the differences between old fashioned paper map and GIS method applied map.

b) Draw and describe the GIS software development steps.

c) Discuss about Errors and Quality of GIS output. 4 + 6 + 5

END