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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## February / March 2023 Semester End Main Examinations

**Programme: B.E.**

**Semester: VII**

**Branch: Institutional Elective**

**Duration: 3 hrs.**

**Course Code: 21CV7OERSG**

**Max Marks: 100**

**Course: Remote Sensing and GIS**

**Date: 22.02.2023**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

### UNIT – I

1	a) Explain the salient features of the geodatabase.	05
	b) Explain spatial reference and Co-ordinate system used in GIS.	05
	c) Discuss advantages of file geodatabase over personal geodatabase.	10

### UNIT – II

2	a) Write a brief note on i) Alternatives ii) Sensitivity Analysis in Multi Criteria Decision Analysis.	08
	b) Akshay wants to buy a new 8GB RAM smartphone for his daily use. He has three main criteria for decision – Price, Processor, and the camera quality (pixel and sensors). For each criteria, pairwise relative weights of alternatives are given below in the form of matrices using 1-5 scale for comparison. Use analytical hierarchical process to advise Akshay which mobile to choose from option A (Iphone), B(Samsung) and C (OnePlus). Explain change will happen if camera quality is removed from the decision criteria.	12

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

Intensity of Importance	Definition	Explanation
1	Equal Importance	Two alternatives contribute equally to the objective.
3	Moderate importance	Moderately favours one alternative over other.
5	Strong importance	Strongly favours one alternative over another alternative.
2,4	Intermediate values between the two adjacent judgements	Compromise between two adjacent judgements
Reciprocals of above	If intensity of one alternative over another is 3 then it will be 1/3 if other alternative is compared with the one.	

Price			Processor			Camera					
	A	B	C	A	B	C	A	B			
A	1	1/5	1/3	A	1	3	2	A	1	3	2
B	5	1	2	B	1/3	1	1/2	B	1/3	1	1/2
C	3	1/2	1	C	1/2	2	1	C	1/2	3	1

  

	Price	Processor	Camera
Price	1	3	2
Processor	1/3	1	1/5
Camera	1/2	5	1

### UNIT - III

3 a) Briefly describe open source software and levels of freedom associated with them. Also, explain Geographic Resources Analysis Support System in the same context. 10

b) Explain the following operations is GIS 10  
 i) Union    ii) Overlay    iii) Dissolve    iv) Clip

### UNIT - IV

4 a) Defend why location based services and GIS integration makes business efficient and productive with an example. 10

b) Discuss mechanism of GIS integration with decision making in Expert GIS. 10

### OR

5 a) Write a note on Mobile GIS and its capabilities. 10

b) Explain structure of an ideal Expert GIS system. 10

### UNIT - V

6 a) Elaborate on things that need considerations during implementation of Enterprise GIS for an organization. 10

b) Briefly explain criteria that decides RDBMS software selection. 10

### OR

7 Discuss case studies on 10

a) Use of GIS in Central Government's vaccination program. 10

b) Use of GIS in disaster management during a cyclone. 10

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