CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

01804

School	Earth Sciences
Department	Geography
Programme	MSc.
Semester	1st

END SEMESTER EXAMINATIONS, MONTH - JanuaryYEAR - 2024

Course:PAGTG11301 –Basics of Geoinformatics	Max. Marks:45	Duration:2:00 Hrs.	Credits:3

INSTRUCTIONS:

1. *Each question carries* ***5 Marks*** *and answer* ***any threequestions****from Section* ***A****.*
2. *Each question carries* ***10 Marks*** *and answer* ***any three****questions from Section* ***B****.*
3. *You* ***must support*** *your answers with suitable* ***diagrams*** *and* ***sketches****.*

Section A

1. Define 'Remote Sensing'. Discuss its characteristics and importance in Geoinformatics.
2. What is a 'Blackbody'? Discuss its significance in the context of radiation laws.
3. What are 'Atmospheric Windows'? Discuss their role in remote sensing.
4. Discuss the different platforms and orbits used in remote sensing.
5. Discuss the future trends and developments in the field of Geoinformatics.

Section B

6. Explain the concept of 'Electromagnetic Radiation (EMR)'. Discuss its spectrum and interaction with the Earth's atmosphere and surface.
7. Discuss the challenges and opportunities associated with the applications of GIS.
8. Explain the concepts of vector and raster data models. Discuss their applications in GIS.
9. Explain the basics of satellite remote sensing. Discuss its principles, stages, and types.
10. Define 'Geographic Information System (GIS)'. Discuss its development, components, and objectives.

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

Central Library, Central University of Karnataka

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

001807

School	Earth Sciences
Department	Geography
Programme	MSc.
Semester	1st

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

END SEMESTER EXAMINATIONS, MONTH - January YEAR - 2024

Course: PAGTC11001 - Geomorphology	Max. Marks: 60	Duration: 2:30 Hrs.	Credits: 4

INSTRUCTIONS:

1. *Answer **any four** questions and each question carries **5 marks** from Section **A**.*
2. *Answer **any four** questions and each question carries **10 marks** from Section **B**.*
3. *You **must support** your answers with suitable **table, diagrams** and **sketches**.*

A. Answer *any four* of the following questions:

1. Prepare an explanatory note on earthquake.
2. Explain the various types of mass wasting with examples.
3. Analyse the various drainage patterns in understanding landscape evolution. How do structural controls influence these patterns?
4. Explain the formation of a karst landscape. Highlight the role of dissolution in creating distinctive karst features.
5. Differentiate between mechanical and chemical weathering processes with suitable examples of each and their effects on landscapes.
6. Describe the characteristics of a braided river and its associated landforms. What factors contribute to the formation of this type of river?

B. Answer *any four* of the following questions:

7. Evaluate the evidence supporting the theory of Continental Drift. How has this theory revolutionized our understanding of the Earth's dynamics and landform evolution?
8. Analyse the role of river meandering in landscape evolution. Discuss the formation processes of meanders and their impact on landform development.
9. Explain the concept of a drainage basin and its role in landscape formation. How do characteristics of a drainage basin influence landform development?
10. Discuss the formation processes of terraces in fluvial landscapes. What factors contribute to the development of river terraces?
11. Evaluate the influence of human activities on geomorphological processes. Discuss examples where human intervention has significantly altered landscapes.
12. Analyse the role of Penck in the theory of landscape development by fluvial processes. Discuss the formation and characteristics of landforms associated with his theory.

*****

Central Library, Central University of Karnataka

701811

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

School	Earth Sciences
Department	Geography
Program	M.Sc. in Applied Geography and Geoinformatics
Semester	I
Course Code	PAGTA1110

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

END SEMESTER EXAMINATIONS, MONTH JANUARY YEAR 2024

Course: Principles of Remote Sensing	Max. Marks: 60	Duration: 2hrs 30 mins	Credits: 04

INSTRUCTIONS:
1. Attempt questions from all sections as directed.
2. Support your answer with suitable diagrams.

Section - A: Attempt any FOUR questions. Each question carries 05 marks

Q1. Recognize the error in the following image. Rectify the image and explain the process of rectification.

60	50	55	60	55
60	45	33	35	45
0	0	0	0	0
65	50	35	55	40
60	55	55	65	40

Q2. Describe the characteristics of Digital Image with suitable diagram.

Q3. For a 10 bit sensor find out the highest DN (Q_{calmax}) and lowest DN (Q_{calmin}) that can be recorded. In this 10 bit sensor, if, DN = 150 for band 1, calculate its corresponding spectral radiance (L_λ) (Given $LMIN_\lambda$= 0 and $LMAX_\lambda$ =52.34 mW/cm^{2}srμm).

Q4. Define Contrast of satellite image. Explain the reasons for low contrast in the image.

Q5. Describe the multi-concept of Remote Sensing.

Q6. Recognize the role of Training sites in image classification. Describe Minimum Distance to means classification strategy in supervised classification.

Section - B: Attempt any FOUR questions. Each question carries 10 marks

Q7. If the highest DN value of satellite image is 511, then what is the radiometric resolution of it? Explain the concept of spectral resolution with suitable examples.

Q8. For an input image the minimum value (min_k) is 60 and maximum value (max_k) is 120. You are displaying the image in 8 bit display unit (computer). Using minimum-maximum contrast stretch find out the corresponding output brightness value (BV_{out}) when the input brightness value (BV_{in}) is 70.

Central Library, Central University of Karnataka

Q9. Explain the Remote Sensing system parameters which are to be considered while performing change detection between multitemporal images.

Q10. Which Image Transformation technique should be chosen by the interpreter to nullify the impact of seasonal changes in solar illumination intensity over the BVs of identical vegetation surface,? Justify your answer.

Q11. Based on the following matrix calculate producer's accuracy and user's accuracy of each class and the overall accuracy of the classification.

	Reference Data			
Classified data	Classes	Water	Agriculture	Forest
	Water	45	2	3
	Agriculture	10	37	3
	Forest	5	0	45

Q12. Explain the concept of Piecewise Linear Contrast Stretch.

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

Central Library, Central University of Karnataka

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

01817

School	Earth Sciences
Department	Geography
Program	M.Sc in Applied Geography and Geoinformatics
Semester	I
Course Code	PAGTC11002

END SEMESTER EXAMINATIONS, MONTH JANUARY YEAR 2024

Course: Basics of GIS and GNSS	Max. Marks: 60	Duration: 3	Credits: 4

INSTRUCTIONS:

- **Answer any of the five questions from the following.**
- **Each question carries 12 Marks.**
- **Support your answer with suitable diagrams and sketches.**

1. Provide an overview of GIS software and explain the differences between raster and vector spatial data models.
2. Examine the various sources of data in GIS, emphasizing the importance of data accuracy, precision, and addressing errors and uncertainties.
3. Explore the concept of coordinate systems in GIS, differentiating between geographic and projection systems.
4. Provide an overview of GNSS and how GNSS contributes to spatial data acquisition and analysis in GIS.
5. Analyze the process of GIS project design, emphasizing the importance of exploring and preparing data.
6. Discuss the methods of storing vector and raster data in GIS in detail.
7. Explain the role of topology in GIS, specifically focusing on the edit and correction of errors.

CENTRAL UNIVERSITY OF KARNATAKA EXAM BRANCH

Central Library, Central University of Karnataka

701813

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

School	SES
Department	Geography
Program	MSc in Applied Geography and Geoinformatics
Semester	III

END SEMESTER EXAMINATIONS, MONTH, January, YEAR 2024

Course: Research Methodology PAGTA31105	Max. Marks: 60	Duration: 2:30	Credits: 04

Instructions:

- Use suitable sketches and diagrams as required

Section A **(5 x 4 = 20 Marks)**

Ans any four questions

1. What is research?
2. Difference between research methods and methodology.
3. What is snowball sampling?
4. What is inferential statistics?
5. What is quota sampling?
6. What is sampling fraction?

Section B **(4 x 10 = 40 Marks)**

Ans any four questions

7. Define scientific research. Discuss objectives and characteristics of scientific research.
8. Define data in research. What are the various types of scales of measurement of data?
9. Define sampling. Give a brief account of non-probability sampling.
10. What is data validity? Discuss the data collection methods for quantitative research.
11. Discuss the inductive and deductive approach of research.
12. Write short notes: Action research, Impact Evaluation Research

Central Library, Central University of Karnataka

:01812

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

School	SES
Department	Geography
Program	MSc in Applied Geography and Geoinformatics
Semester	III

END SEMESTER EXAMINATIONS, MONTH, January, YEAR 2024

Course: Geographical Thought PAGTC31010	Max. Marks: 60	Duration: 2:30	Credits: 04

Instructions:

- Use suitable sketches and diagrams as required

Section A **(5 x 4 = 20 Marks)**

Ans any four questions

13. What is the ideographic approach?
14. What is location in geography?
15. Neo determinism.
16. Define geography.
17. Discuss the feminist approach towards place.
18. What is post modernism in geography?

Section B **(4 x 10 = 40 Marks)**

Ans any four questions

19. Write the contribution of Greck geographers in mathematical geography.
20. Discuss the scientific and technological development during the medieval period of geographical evolution.
21. Discus the humanistic approach in geography.
22. Write ancient Indian scholars' contributions to the development of the geographical knowledge.
23. Discuss the contribution of Alexander Von Humboldt as the founder of modern geographical thought.
24. Discuss the quantitative revolution and its impact on geography

Central Library, Central University of Karnataka

01808

CENTRAL UNIVERSITY OF KARNATAKA
(Established by an Act of the Parliament in 2009)
Kadaganchi, Aland Road, Kalaburagi Dist-585367
Website: www.cuk.ac.in

School	Earth Sciences
Department	Geography
Program	PG
Semester	3rd
Course Code	PAGTC31008

END SEMESTER EXAMINATIONS, MONTH January YEAR 2024

Course: Hydrology and Oceanography	Max. Marks: 60	Duration: 2.30hrs	Credits: 4

INSTRUCTIONS:

1. Answer **any 4 questions** in Section A.
2. Each question carries **5** Marks in Section A.
3. Answer **any 4 questions** in Section B.
4. Each question carries **10** Marks in Section B.
5. Support your answer with suitable diagrams, sketches and examples

---

SECTION – A

Q.1 Name the different instruments used in measuring precipitation. Explain about the instrument which can measure all forms of precipitation

Q.2 Differentiate pycnocline, halocline and thermocline

Q.3 What is the difference between Ekman spiral and Ekman transport

Q.4 Distinguish between challenger expedition and Glomar challenger expedition

Q.5 What do you mean by thermohaline circulation

Q.6 Name the western boundary currents and eastern boundary currents show them in a world map.

SECTION – B

Q.7 Explain with the help of a sketch the hydrological cycle in nature indicating its various phases. Also give an account of global water budget.

Q.8 Write an essay on morphology of oceans.

Q.9 What are the two processes that cause precipitation? Describe the necessary conditions to produce rainfall. Describe the scope of hydrometeorology

Q.10 Elucidate UNCLOS maritime zones.

Q.11 Classify the ocean currents based on mode of origin, velocity and boundary. Explain their characteristics

Central Library, Central University of Karnataka

Q.12 Explain about the unconsolidated layer of sediments lying on the ocean floor. Classify them on the basis of source and composition,

****

CENTRAL UNIVERSITY OF KARNATAKA
EXAM BRANCH

Central Library, Central University of Karnataka