Seat No. _____   Enrollment No. _____

THE CHARUTAR VIDYA MANDAL UNIVERSITY
M.Sc. Geoinformatics – SEMESTER 2
SUMMER (REGULAR) 2022 EXAMINATION

Course Title: Digital Image Processing

Course Code: 101400201

Total Printed Pages : 02

Date: 05/05/2022   Time: 10.30 am to 12.30 pm   Maximum Marks: 60

Instructions:
- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumptions wherever necessary.

Q. 1   **Answer the following multiple choice questions.**   (12)

(1)   Second derivatives are zero at points on
(a) ramp   (b) step   (c) constant intensity   (d) edge

(2)   _____ element of Image Interpretation depends on the object outline.
(a) Texture   (b) Size   (c) Shape   (d) Site

(3)   For line detection we use mask that is
(a) Gaussian   (b) ideal   (c) laplacian   (d) butterworth

(4)   In ____ level of DIP process Input is image and output is attributes.
(a) Low   (b) Medium   (c) High   (d) Last

(5)   Replication of pixels is called
(a) coding redundancy   (b) spatial redundancy
(c) temporal redundancy   (d) both b and c

(6)   What is the full form of SAR?
(a) Systematic aperture radar   (b) Synthetic aperture radar
(c) Systematic appearance radar   (d) Synthetic appearance radar

(7)   Which of the following is the expansion of PDF, in uniform PDF?
(a) Probability Density Function   (b) Previously Derived Function
(c) Post Derivation Function   (d) Portable Document Format

(8)   If frequency of satellite sensor for a specific location is 17-19 days then it is called as ___ resolution.
(a) High Temporal   (b) Medium Temporal
(c) Low Temporal   (d) Very High Temporal

(9)   Which of the following statement describe the term pixel depth?
(a) It is the number of units used to represent each pixel in RGB space
(b) It is the number of mm used to represent each pixel in RGB space
(c) It is the number of bytes used to represent each pixel in RGB space
(d) It is the number of bits used to represent each pixel in RGB space

(10) For Image Enhancement a general-approach is to use a function of values of f (input image) in a predefined neighborhood of (x, y) to determine the value of g (output image) at (x, y). The techniques that uses such approaches are called _____
(a) Contouring   (b) Contrast stretching
(c) Mask processing   (d) None of the mentioned

(11) How is array operation carried out involving one or more images?
(a) array by array   (b) pixel by pixel
(c) column by column   (d) row by row

(12) A pixel p at coordinates (x, y) has neighbors whose coordinates are given by: (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1) This set of pixels is called _____
(a) 4-neighbors of p   (b) Diagonal neighbors
(c) 8-neighbors   (d) None of the mentioned

Q. 2	Attempt **any eight** of the following.	**(16)**
(1)	What is True Color Composite and False Color Composite?	
(2)	What are the limitations of averaging filter?	
(3)	Define averaging filters, Image Mosaicking.	
(4)	What is visualization? List out types of visualization.	
(5)	Write a note on Digital Image Data Formats.	
(6)	List out and define elements of visual interpretation.	
(7)	List out and define Spatial Filters.	
(8)	What is Support Vector Machine? How it works?	
(9)	Define pictograph, Scatter diagram	
(10)	What is Image Compression? List out reasons to compress the image.	

Q. 3	(a) What is Interactive and Non-Interactive graphics?	**(04)**
	(b) Explain video control and its operations to display raster graphics on monitor.	**(04)**

OR

Q. 3	Explain 2-D transformations in detail with example.	**(08)**

Q. 4	What is Analog and Digital Image? Explain all types of digital image in detail.	**(08)**

OR

Q. 4	What are Radiometric errors? List out sources of errors. List out and explain causes of radiometric errors in detail.	**(08)**

Q. 5	(a) Write a note on basic linear transformation functions.	**(04)**
	(b) Write a note on histogram equalization by taking suitable example.	**(04)**

OR

Q. 5	(a) Write a note on piece wise linear transformation functions.	**(04)**
	(b) Write a note on histogram matching by taking suitable example.	**(04)**

Q. 6	List out and define 3 types of data redundancy. Explain Coding redundancy in detail and also explain how to remove it from the image.	**(08)**

OR

Q. 6	(a) What is supervised classification? Write down the steps for supervised classification. List out algorithms for supervised classification.	**(04)**
	(b) Write a note to check classification accuracy. Also explain types of errors in classified image.	**(04)**

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THE CHARUTAR VIDYA MANDAL UNIVERSITY

M.Sc. Geoinformatics, Sem-IInd

Examination: May 2022

101400202: Spatial Analysis & Modeling

Date: 06th May 2022   **TOTAL MARKS:** 60

Day: Friday   **Time:** 10:30 AM to 12:30 PM

Q. 1   **Choose the most correct answer.**   **[12]**

(1) For interpolation in GIS _____called the alternative choice problem.
(A) Problem of saddle point   (C) Lag & Semiveriogram
(B) Semiveriogram   (D) All of above

(2) For statistical surface data collection of irregular lattices of Vallbh Vidyanagar road, _____ method could applicable.
(A) Staggered start   (C) Boath (A) & (B)
(B) Random start   (D) Simple random

(3) For _____ type of data network analysis is awkward.
(A) Vector   (C) Boath (A) & (B)
(B) Raster   (D) None of Given

(4) 6 bit gray scale image provide different _____ level color depth in image.
(A) 16   (C) 32
(B) 64   (D) 128

(5) Reilly' law for gravity model presumes the geography of the area is _____.
(A) Flat   (C) Contain river & mountain
(B) Never flat   (D) None of Given

(6) Voronoi polygons are best suited for _____ surface
(A) Only 3 D   (C) Both 2 D & 3 D
(B) Only 2 D   (D) None of Given

(7) _____ is necessary to include in map design to publish a perfect map for user.
(A) Title   (C) Date
(B) Legend   (D) All of given

(8) For transportation study we need to collect attribute data of :
(A) Road type & No of crossing   (C) Signal system & load of traffic
(B) No of one way & two way lanes   (D) All of above

(9) Non Topographical surface contain _____ data set
(A) Large & heavy   (C) Large but light
(B) Small but heavy   (D) Small and light

(10) Local Operation in raster analysis is performed between the raster as _____ pixel/cell.
(A) One to one   (A) One to many
(B) Many to one   (B) Many to many

(11) For Location analysis _____ model heavily depend on distance calculations.
(A) Gravity   (A) Boath (A) & (B)
(B) Huff's   (B) None of Above

(12) _____ model move from general knowledge to specific answer in GIS modeling.
(A) Deductive   (A) Boath (A) & (B)
(B) Inductive   (B) None of Above

Q.2 **Answer the following in short.** (Attempt any eight, each two marks) [16]
    (1) List four main problems of interpolation in GIS.
    (2) Enlist different parameters, for analysis of location –Allocation problem.
    (3) Define gravity model in short.
    (4) What is conflict resolution in modeling?
    (5) What are the differences between large and small scale maps in cartography?
    (6) List higher level object for point, line and polygon.
    (7) Give a comparison between Paper map & Digital Map?
    (8) List advantages of vector data.
    (9) List three basics conditions for growth of Voronoi polyhedron.
   (10) List different impedance for network analysis in GIS.

Q.3 Explain view shade and line of sight analysis with necessary example, and make list of [08] applications.

OR

Explain contour lines and TIN model in detail with schematic illustration and data table. [08]

Q.4 Why rasterization is required? Explain in detail rasterization process step by step in [08] detail with suitable example

OR

Write a note on location & allocation of GIS, Explain with necessary example. [08]

Q.5 With example explain Reilly's law of retail gravitation model. [08]

OR

Explain nearest neighborhood analysis with example and spatial data mining. [08]

Q. 6 Write and explain flowchart of Mountain cabin construction site selection. [08]

OR

What is model implementation and verification in GIS? [08]

-: All The Best:-

Seat No. _____   Enrollment No. _____

THE CHARUTAR VIDYA MANDAL UNIVERSITY
M.Sc. Geoinformatics – SEMESTER 2
SUMMER (REGULAR) 2022 EXAMINATION

Course Title: Web Programming

Course Code: 101400203

Total Printed Pages : 02

Date: 07/05/2022   Time: 10.30 am to 12.30 pm   Maximum Marks: 60

Instructions:
- Attempt all questions.
- Numbers to the right indicate full marks for each question.
- Make suitable assumptions wherever necessary.

Q. 1   **Answer the following multiple choice questions.**   **(12)**

(1)   What is the preferred way for adding a background color in HTML?
(a) <body background="yellow
(b)<background>yellow</background>
(c) < body style="background-color:yellow">
(d) <background color="yellow">text<background>

(2)   How can you open a link in a new browser window?
(a) <a href="url" new>   (b) <a href="url" target="new">
(c) <a href="url" target="">   (d) <a href="url" target="_blank">

(3)   Which of the following JavaScript cannot do?
(a) JavaScript can react to events
(b) JavaScript can manipulate HTML elements
(c) JavaScript can be use to validate data
(d) None of these

(4)   How can you make a list that lists the items with numbers?
(a)   (b) <list>   (c)   (d) <dl>

(5)   Which of the following is not a variable scope in PHP?
(a) Extern   (b) Local   (c) Static   (d) Global

(6)   Which of the following is used for concatenation in PHP?
(a) + (plus)   (b) * (Asterisk)   (c) . (dot)   (d) append()

(7)   Which of the following function is used to set cookie in PHP?
(a) createcookie()   (b) setcookie()
(c) makecookie()   (d) None of the above

(8)   PHP recognizes constructors by the name _____
(a) classname()   (b) _construct()
(c) function _construct()   (d) function __construct()

(9)   The practice of separating the user from the true inner workings of an application through well-known interfaces is known as _____
(a) Encapsulation   (b) Inheritance
(c) Polymorphism   (d) Abstraction

(10)   _____ mysql function is used to select database.
        (a) mysql_selectdatabase()   (b) mysql_selectdb()
        (c) mysql_select_db()   (d) mysql_select_database()
(11)   To unregister a session variable _____ function is used.
        (a) session_start()   (b) unset()
        (c) session_unset()   (d) session_destroy()
(12)   _____ is used to join two network segments together.
        (a) Hub   (b) Switch
        (c) Bridge   (d) None of these

Q. 2		Attempt **any eight** of the following.	(16)
	(1)	Define Router, Bridge	
	(2)	Differentiate GET and POST method	
	(3)	Explain any two looping statements with example.	
	(4)	Define Frames, Packet Switching	
	(5)	Write a note on various ways to write/add javascript into HTML page.	
	(6)	Define typeof operator and conditional operator of javascript.	
	(7)	What is Variable? Explain various scopes of variable.	
	(8)	What is regular Expression? Write down regular expression for Mobile No.	
	(9)	What is MySQL? List out features of MySQL.	
	(10)	Differentiate Session and Cookie	

Q. 3	(a) List out networking devices and explain any two in detail.	(04)
	(b) Write a note on CSS.	(04)

OR

Q. 3	(a) Explain Table tags with example.	(04)
	(b) What is HTML form? List out and explain any two form controls with example.	(04)

Q. 4	What is Event? How to handle it? List out various types of events in javascript. Explain event handling with code.	(08)

OR

Q. 4	Write a note on regular expression. Explain how validation can be done in php through Javascript.	(08)

Q. 5	Write a note on conditional statements in php with suitable example.	(08)

OR

Q. 5	Write a note on User defined function in php. Explain different criteria to pass arguments to the function. How to return value from the function?	(08)

Q. 6	What is session in PHP? How to pass data from one web page to another using session? Also explain how to remove session variable and session.	(08)

OR

Q. 6	What is object oriented programming? Explain polymorphism, overloading, encapsulation, class and instance.	(04)

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THE CHARUTAR VIDYA MANDAL UNIVERSITY

M.Sc. in Geoinformatics, Sem-IInd
Examination: May 2022
101400208: Disaster Management

Date: 09th May 2022   **TOTAL MARKS:** 60
Day: Monday   **Time:** 10:30 AM to 12:30 PM

Q. 1   Choose the most correct answer.   **[12]**

(1) _____ Indian organization working for disaster management.
  (A)   EHRA   (C)   INCOIS
  (B)   MoES   (D)   All of above

(2) _____ is/are type of body wave in case of earth quick.
  (A)   P- Wave   (C)   Both (A) & (B)
  (B)   S-Wave   (D)   None of above

(3) As per rule disaster management is responsibility of _____.
  (A)   All Countries of the world   (C)   Country/state under disaster
  (B)   Individual family & / or person (D)   None of above

(4) _____ Indian organization working for disaster management.
  (A)   EHRA   (C)   INCOIS
  (B)   MoES   (D)   All of above

(5) Land sliding occurs when rocks _____ holding capacity is _____.
  (A)   Internal, increase   (C)   Internal , decrease
  (B)   External , increase   (D)   None of above

(6) _____ land is vulnerable to drought in India.
  (A)   86 %   (C)   68%
  (B)   50 %   (D)   None of above

(7) 8% land is vulnerable to _____ in India
  (A)   Flood   (C)   Earth quick
  (B)   cyclones   (D)   All of above

(8) _____ Satellite data is used for Volcano detection from RS.
  (A)   Modis   (C)   Both (A) & (B)
  (B)   AVHRR   (D)   All of above

(9) _____ satellite data is used for drought detection from RS.
  (A)   Modis   (C)   Both (A) & (B)
  (B)   AFIS   (D)   All of above

(10) _____ city is part of PROMISE 2005-2008.
  (A)   London   (C)   Bombay
  (B)   Paris   (D)   Kalutara

(11) Restructuring of farming and other loan is via _____
  (A)   Lead bank   (C)   Both (A) & (B)
  (B)   District Authorities   (D)   None of above

(12) GPS units & buoys are used to determine to wave _____ for Tsunami.
  (A)   Height   (C)   Both (A) & (B)
  (B)   Velocity   (D)   None of above

Q.2   **Answer the following in short.** (Attempt any eight, each two marks)   [16]
   (1)   Give complete classification of disasters.
   (2)   What is Paradigm shift in Disaster Management? Explain any one.
   (3)   List which satellite and band are used for flood mapping? Why?
   (4)   List Basic utilities for rehabilitation stage.
   (5)   Explain warning and fore casting system using Internet.
   (6)   Give full form of NDRF, SDRF, UNICEF & DDRF.
   (7)   List out characteristics of disaster.
   (8)   Explain fire detection mechanism with Indian government web site.
   (9)   What is PROMISE program for Asian secondary cities?
   (10) How is zoning helpful in disaster management?

Q.3   Write a note on earthquake disaster with necessary diagrams in contest of GIS.   [08]
                                    OR
           List technological disasters, how it affect us? Explain any two technological disasters.   [08]

Q.4   Describe active government planning and nodal agencies for disaster management for   [08]
           India.
                                    OR
           Explain each phase of disaster, as disaster management planning.   [08]

Q.5   Explain early warning system developed by human for tsunami, & land sliding forecast.   [08]
                                    OR
           How retrofitting helpful to reduce risk of disaster? Categories retrofitting's elements   [08]
           and its importance with case study.

Q. 6 Explain long term & short term strategies for Disaster Risk Reduction (DRR) program.   [08]
                                    OR
           What is disaster management act? When it establish? Explain financial mechanism of   [08]
           DMA India.

-: All The Best: -