[120]

SARDAR PATEL UNIVERSITY
M. Sc. (GEOINFORMATICS)
SEMESTER – II
PS02CGIN01 (DIGITAL IMAGE PROCESSING)
11TH APRIL, 2017

Time : 02:00 p.m. to 05:00 p.m.

Marks : 70

> Note : Answers of all the questions (including multiple choice questions) should be written in the provided answer book only.

Q-1 Pick up the most appropriate answer from the given alternatives and write in your answer book. (8)

(1) The process of extracting information from the image is called as
   (A) Image enhancement
   (B) Image restoration
   (C) Image Analysis
   (D) Image compression

(2) How do you bring out more of the skeletal detail from a Nuclear Whole Body Bone Scan?
   (A) Sharpening
   (B) Enhancing
   (C) Transformation
   (D) None of the mentioned

(3) Computation of derivatives in segmentation is also called
   (A) spatial filtering
   (B) frequency filtering
   (C) low pass filtering
   (D) high pass filtering

(4) 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

(5) An image is a two dimensional function where x and y are
   (A) spatial coordinates
   (B) frequency coordinates
   (C) time coordinates
   (D) real coordinates

(6) The initial step in any image processing technique is
   (A) segmentation
   (B) image acquisition
   (C) masking
   (D) normalization

(7) $L = 2^3$ would have
   (A) 2 levels
   (B) 6 levels
   (C) 8 levels
   (D) 4 levels

(8) The transformation in which an object can be shifted to any coordinate position in two dimensional plane are called
   (A) Translation
   (B) Rotation
   (C) Scaling
   (D) All of these

Q-2 Answer the following short questions: (ANY SEVEN) (14)

1) "Adding image with itself makes image brighter" Justify.
2) List and define basic types of data redundancy.
3) Define correlation and convolution in terms of Image Processing for Geoinformatics
4) What is segmentation? What are the three types of discontinuity in digital image?
5) What are the limitations of Averaging Filter in interpreting geo information's?
6) List and define two types of Computer Graphics. Explain conversion of one graphic into another.
7) Write a note on Digital Image Data formats
8) Define Sampling and Quantization.
9) Explain Run length Coding with example.

Q-3 (a) Write a note on basic and other 2-D Transformations. [6]

(b) Write a note on Basic video controller refresh operations. [6]

OR

(b) Define and explain Geometric and Radiometric errors in Satellite image in detail.

Q-4 (a) Explain Steps in Digital Image Processing in detail [6]

(b) Describe the elements of visual interpretation in detail. [6]

OR

(b) Write a note on Image Sensing and acquisition. Also explain 3 types of sensors with neat diagram.

Q-5 (a) What is histogram of an image? How does it modify an image in equalization and specification techniques? [6]

(b) Write a detailed note on image enhancement in the frequency domain by (INCLUDE TERMINOLOGIES AND ADVANTAGES) [6]
(i) Low pass filtering . (ii) High pass filtering.

OR

(b) Elucidate smoothening and sharpening filtering process in spatial domain

Q-6 (a) Differentiate between lossless and lossy compression and explain transform coding system with a neat diagram. [6]

(b) Write a short note on Supervised and Unsupervised Classification [6]

OR

(b) What do you mean by data redundancy? Explain in detail three methods of the same.

*********** ALL THE BEST ***********

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M.Sc. Geoinformatics
SEM – II, April 2017
Spatial Analysis & Modeling (PS02CGIN02)

DATE: 13th April, 2017   TIME: 02:00 PM TO 5:00 PM
DAY: Thursday   TOTAL MARKS: 70

Q. 1   Choose the correct answer.   **[08]**
(1) Which method is globally accepted for automatic vectorization ?
    (A) Line thinning   **(C)** Line following
    (B) Shape reorganization   **(D)** None of above

(2) Statistical surface contain features of _____ values.
    (A) X co-ordinates only   **(C)** y co-ordinates only
    (B) X & Y co-ordinates only   **(D)** X , Y & Z coordinates
(3) In DEM, D stand for _____, (E= elevation & M = model)
    (A) Digital   **(C)** Differential
    (B) Dual   **(D)** Direct
(4) Slope is define by _____
    (A) Rise / Reach   **(C)** Reach / Rise
    (B) Rise x Reach   **(D)** None of above
(5) Route analysis provide best analysis performance in _____ .
    (A) Vector data   **(C)** Raster data
    (B) Both (A) & (B)   **(D)** None of above
(6) Formula of gravity model = _____
    (A) $k\dfrac{P_1 P_2}{d^2}$ **(C)** $k\dfrac{d^2}{P_1 P_2}$

    (B) $P_1 P_2$ **(D)** None of above
(7) In cartography model _____ model begin with examine the placement, pattern, sizes, shapes and other properties of specific map entities and make conclusion.
    (A) Confirmatory   **(C)** Inductive
    (B) Exploratory   **(D)** None of above
(8) To find Centroids of irregular polygon_____ method is used.
    (A) Trapicone   **(C)** Zonecone
    (B) Trapezoid   **(D)** None of above

Q.2   Answer the following.(attempt any seven, each two marks)   **[14]**
  (1) Explain TIN model.
  (2) Define: (1) Duplex vertex, (2) Bad envelop
  (3) What Is linear interpolation?
  (4) What is conflict resolution in cartography modeling?
  (5) What is shape or Form analysis?
  (6) What is cartography overlay?
  (7) Define different type of cartography model.
  (8) Show importance of nearest neighborhood analysis.
  (9) What is importance of resolution in vectorization?

Q.3 **(A)** What is important of slope and view shade analysis in GIS? [06]

(B) What is statistical surface? Explain TIN model & higher level object in detail. [06]

OR

(B) Explain main four problems of interpolation. [06]

Q.4 **(A)** Discuss complete raster to vector conversation process in GIS. [06]

(B) What is route analysis in GIS? Explain in detail with suitable example. [06]

OR

(B) (1) Explain advantage of raster format and vector format. [03]

(2) Explain disadvantages of raster format and vector format. [03]

Q.5 **(A)** Elaborate in detail with neat diagram "Thiessen polygon analysis". [06]

(B) Explain gravity model of GIS. [06]

OR

(B) Explain nearest neighborhood analysis and spatial data mining. [06]

Q. 6 **(A)** Draw and explain selection of place on terrain to construct resort using model flow chart. [06]

(B) What is model implementation and verification? [06]

OR

(B) Explain cartography, and cyclic modeling process using suitable example. [06]

-: All The Best:-

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SARDAR PATEL UNIVERSITY
M.Sc.(Geoinformatics)
SEMESTER-II
External Examination– 2017
PS02CGIN03:Java Programming
17th April ,2017

Time:02:00pm to 05.00pm   Marks:70

Q1   **Give answers of following Multiple choice questions**   [8]

1 Which of these is a super class of all exceptional type classes?
   A   String   B   RuntimeExceptions
   C   Throwable   D   Cachable
2 ArrayList class belongs to which package?
   A   java.lang   B   java.util
   C   java.math   D   java.io
3 To run an applet..........command is used.
   A   run   B   java
   C   appletviewer   D   applet
4 What is the Full name of RMI?
   A   Remote method interface   B   Remote method invocation
   C   Remote member invocation   D   Remote member interface
5 _____ protocol is used to receive email.
   A   POP   B   HTTP
   C   NNTP   D   FTP
6 _____ method executes only ones.
   A   start()   B   destroy()
   C   stop()   D   init()
7 _____ keyword is used to inherit a class.
   A   this   B   super
   C   extends   D   stream
8 _____ operator is used to allocate memory for an object.
   A   alloc   B   malloc
   C   class   D   new

Q2   **Do as directed (Any 7)**   [14]

1 Explain static and final keyword with example.
2 What is thread? Explain life cycle of thread.
3 List any four listener types for an event.
4 Explain the private and public access specifiers in java with example.
5 What is a package? Enlist steps for creating a package.
6 What is JVM?
7 Differentiate between: Interface and Abstract Class.
8 Explain this and super keyword with example.
9 What is an applet and explain the life cycle of an applet.

Q3 [A]   What is Java? Enlist all features of JAVA and explain any six.   [6]
Q3 [B]   What is JDBC? Explain various JDBC drivers.   [6]
                                    OR
Q3 [B]   Explain the concept of inheritance and polymorphism in java with example. [6]

Q4 [A]   What is Exception? Explain exception handling mechanism in java with suitable [6]
           example.
Q4 [B]   What is layout manager? List different layouts and discuss Any one layouts in [6]
           details.
                                    OR
Q4 [B]   Explain Java mail API in detail   [6]

Q5 [A]   Write short note on method overloading and method overriding.   [6]
Q5 [B]   What is an Event? Explain Event Delegation Model with example.   [6]
                                    OR
Q5 [B]   Explain string & string buffer class in brief.   [6]

Q6 [A]   What is a servlet? What are its advantages & define its life cycle methods. [6]
Q6 [B]   What is a Thread? Explain two ways of Thread creating? Describe different state [6]
           of a Thread.
                                    OR
Q6 [B]   What is Java bean? Discuss its architecture & and state its advantages.   [6]

—————X——— X ———————

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SARDAR PATEL UNIVERSITY
M. Sc. (GEOINFORMATICS)
SEMESTER – II
PS02CGIN04 (WEB PROGRAMMING)
19TH APRIL, 2017

Time : 02:00 p.m. to 05:00 p.m.   Marks : 70

> Note : Answers of all the questions (including multiple choice questions)
> should be written in the provided answer book only.

Q-1 Pick up the most appropriate answer from the given alternatives and write in   **(8)**
your answer book.

(1) Determine the correct order of given steps
1. Open a connection to MySQL Server
2. Execute the SQL Query
3. Fetch the data from query
4. Select database
5. Close Connection

(A) 5, 2, 1, 3, 4   (B) 1, 4, 2, 3, 5
(C) 1, 3, 2, 4, 5   (D) 1, 4, 5, 3, 2

(2) Which of the following is not a string function in PHP?
(A) strstr()   (B) stristr()
(C) strchr()   (D) None of these

(3) ___ tag is used to create listbox in HTML.
(A) <select multiple>   (B)
(C) <list>   (D) <select>

(4) What does PHP stand for?
(A) Personal Home Pages   (B) Private Home Page
(C) Hypertext Pre-Processor   (D) Personal Hypertext Processor

(5) To get the value from the user without textbox ___ is used
(A) alert box   (B) Combo box
(C) Confirm box   (D) Prompt box

(6) _____ are powerful mechanism for adding styles (e.g. fonts, colors, spacing
etc.) to web documents.
(A) Dream Weaver   (B) Style Sheets
(C) Navigator   (D) Wamp Server

(7) _____ is a default port number for MySQL Server.
(A) 3386   (B) 8080
(C) 3306   (D) 8088

(8) In PHP mysql_connect() syntax does not take ___ parameter.
(A) Userid   (B) database name
(C) password   (D) All of above

(1)

Q-2 Attempt the following: (ANY SEVEN) (14)
1) Explain Structure of HTML document.
2) Differentiate: PHP and ASP
3) What do you mean by open source software?
4) Write a note on Regular Expression.
5) Explain <frame> and <frameset> tag with example.
6) Explain various methods to insert Javascript code in HTML.
7) Differentiate between GET and POST.
8) What is Mail Server? Give any two name of Mail Server.
9) Define : Web Server & Mail Client.

Q-3 (a) List and explain various dialog boxes in Javascript. [6]

(b) What is JavaScript? Differentiate between client side and server side scripting along with their advantages and disadvantages. [6]

OR

(b) Explain types of list in detail with example.

Q-4 (a) What is array? List and explain various types of arrays supported by PHP. [6]

(b) What do you mean by the word "Session"? Explain the session handling in PHP by giving suitable example. [6]

OR

(b) Write a note on CSS with syntax and example. List and explain attributes of CSS.

Q-5 (a) List out looping statements in PHP. Explain all in detail with example. [6]

(b) Write code snippet for File Upload in PHP and write what changes are to be made in HTML form to upload a file. [6]

OR

(b) List out conditional statements in PHP. Explain all in detail with example.

Q-6 (a) Explain the term MySql. Write a sample code to create a connection of PHP to MySQL database. [6]

(b) Write a note on include() and require() method in PHP. [6]

OR

(b) List out any 4 MySQL functions and explain them with syntax and example.

####### *ALL THE BEST* #######

(2)

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SARDAR PATEL UNIVERSITY

M.Sc. (Geoinformatics)

SEMESTER – II

EXTERNAL EXAMINATION (April 2017)

PS02EGIN02 (Disaster Management)

Date: 21-04-2017   Marks: 70

Time: 02:00 pm to 05:00 pm

Q.1 Answer all questions   (8 Marks)

(A) Proportion of methane in global warming is _____ %

a.   19   b.   68   c.   11   d. 6

(B) Tsunami vulnerability in India is _____ %

a.   19   b.   3   c.   12   d. 8

(C) Early warning is component of _____ planning in cycle of disaster management

a.   Recovery   b. Preparedness   c. Response   d. Mitigation

(D) _____ Ministry is handling drought disaster in India

a. Agriculture   b. Environment & Forest   c. Earth Sciences   d. Rural Development

(E) Disaster Management Act was formulated in _____ year

a.   2003   b.   2005   c.   2004   d. 2001

(F) The Indian Ocean Tsunami occurred in _____ year

a. 2001   b. 2004   c. 2005   d. 2003

(G) Important parameter for landslide early warning is _____

a.   Slope   b.   Surface Type   c.   Rani Fall   d. Drainage Pattern

(H) Meteorological drought arises when the actual rainfall is _____ % less than the expected rainfall over a wide area and for an extended period of time

a.   15   b.   20%   c. 25%   d.   30%

Q.2 Answer any seven questions (14 Marks)

1. Write full form of IMD, CWC, NDMA and IDRN

2. Define disaster, vulnerability, hazard, capacity and their relationship

3. What is focus and epicenter for earthquake and how epicenter is determined?

4. Define landslide and list four major manmade and natural causes of landslide

5. State difference between weather and climate and mention climate change observations

6. Explain use of GPS in drought disaster management

7. Briefly explain role of GIS in impact assessment of flood in context of agriculture

8. Explain urban flooding

9. What is financial mechanism for disaster management in India?

Q.3 (a) Explain drought and types of drought and method of composite vulnerability
assessment (6 Marks)

(b) Describe risk assessment and analysis in context of landslide disaster (6 Marks)

OR

(b) What is role of RS and GIS in cyclone management (6 Marks)

Q.4 (a) Describe role of five major institutes in disaster management (6 Marks)

(b) Explain pre-disaster and post-disaster planning in context of earthquake (6 Marks)

OR

(b) Explain global disaster trend in context of climate change (6 Marks)

Q.5 (a) Describe disaster profile of India and five mega disasters of India (6 Marks)

(b) Explain national disaster management plans and guidelines (6 Marks)

OR

(b) What do you understand by paradigm shift in Disaster Management (6 Marks)

Q.6 (a) What are structural and non-structural measures for flood management? (6 Marks)

(b) Explain technological disasters (6 Marks)

OR

(b) Explain role of ICT in entire cycle of disaster management (6 Marks)

X=X=X

(2)