

**G.T.N ARTS COLLEGE,(AUTONOMOUS)(SSC),DINDIGUL.
PG DEPARTMENT OF MSC(CS)
EXTERNAL QUESTION 2019-2020**

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Reg. No:

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G .T.N. ARTS COLLEGE (AUTONOMOUS)

(Affiliated to Madurai Kamaraj University)

(Accredited by NAAC with 'B' Grade)

END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc.(CS)
Course Code: 17PCSC21
Course Title : Advanced Java
Programming

Date : 13.11.2019
Time: 2.00 pm. to 5.00 pm.
Max Marks :75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Best Answer.

1. What is the number of bytes used by java primitive long?
[a] Based on compiler [b] 2
[c] 4 [d] 8
2. Size of float and double in java is _____.
[a] 32 & 64 [b] 64 & 64
[c] 32 & 32 [d] 64 & 32
3. Which of the following block executed compulsory whether exception is caught or not.
[a] finally [b] catch
[c] throws [d] throw
4. The Program statement have to be monitored for exception are contained in which block.
[a] try [b] throw
[c] catch [d] throws

5. Which method must be implemented by all thread?
- [a] wait() [b] start()
[c] stop() [d] run()
6. Which package contain color class?
- [a] java.applet [b] java.awt
[c] java.graphics [d] java.lang
7. Which object can be constructed to show any number of choices in the visible window?
- [a] Labels [b] Choice
[c] List [d] Check box
8. Which is a component in AWT that can contain another component like buttons, text field and label?
- [a] Window [b] container
[c] Panel [d] frame
9. IDL compiler generates _____ and _____.
- [a] runnable code, stubs [b] code, clients
[c] stubs, client [d] stubs and skeletons
10. Filters were officially introduced in the servlet _____ specification.
- [a] 2.1 [b] 2.3 [c] 2.2 [d] 2.4

SECTION - B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) Discuss about java Type Conversion and casting process.
- [OR]
- b) Explain the features of object oriented programming in java.

12. a) How can we create a class and object in java? Give an example.

[OR]

- b) Compare Method Overloading and Method Overriding with an example.

13. a) Write a java program to read and write the content on the file.

[OR]

- b) What is mean by thread? How can we create multiple threads in a program?

14. a) How can you create a jTable in Swing? Give an example program.

[OR]

- b) Explain any three AWT Controls with suitable example.

15. a) What is servlet ? Explain its Lifecycle and their methods with diagram.

[OR]

- b) What is java Bean? List out the advantages of Java Bean.

SECTION - C

[3 X 7]

Answer Any THREE Questions.

16. Explain the Selection, Iteration and Jump statements in Java.
17. What is Exception? Explain the Exception handling mechanism.
18. How can we use the classes of java.io package for reading and writing on the Console?
19. Explain the Event handling process in AWT With an example.
20. How do you create Http and Generic Servlet? Give an example.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc.(CS)

Date : 18.11.2019

Course Code: 17PCSC23

Time: 2.00 pm. to 5.00 pm.

Course Title : Operating System

Max Marks :75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

- _____ register contains address of next instruction to be executed by the CPU.
[a] LBR [b] Base
[c] CC [d] PC
- _____ is the forced deallocation of the CPU from a program
[a] preemption [b] scheduling
[c] batch [d] low priority
- A process is comprised of _____ component.
[a] 5 [b] 7
[c] 6 [d] 8
- _____ scheduling decides when to admit an arrived process based on its nature.
[a] short term [b] long term
[c] medium [d] time sharing

5. _____ permits allocation and deallocation of memory in random order.
- [a] Stack [b] Queue
[c] Heap [d] Frames
6. _____ is the coincidence of high page traffic and low CPU efficiency
- [a] Thrashing [b] loading
[c] Preloading [d] fault.
7. In _____ version 4.2 the filename can be up to 255 bytes long.
- [a] UNIX [b] windows
[c] Solaris [d] System V
8. _____ file is a classical view of a file consisting of records and fields.
- [a] Structured [b] byte stream
[c] logical [d] physical
9. _____ is a control structure in higher level programming language.
- [a] Semaphore [b] signal
[c] CCR [d] monitor
10. UNIX SVR4 supports _____ interprocess message communication facilities,
- [a] 3 [b] 7
[c] 4 [d] 5

SECTION - B
Answer ALL the Questions.

[5 X 7 = 35]

11. a) Explain in detail about System Calls.

[OR]

b) What are the steps needed for interrupt action?. Explain

12. a) Explain process states and process control block in detail.

[OR]

b) What is thread?. Explain threads in detail.

13. a) What is paged segmentation? How it can be implemented?

[OR]

b) Write about Least recently used page replacement algorithm variants with example.

14. a) Describe UNIX file system.

[OR]

b) What are the terminology used in security and protection of information? Explain.

15. a) Define Deadlock. Explain its models with examples.

[OR]

b) Explain various approaches of deadlock handling.

SECTION - C
Answer Any THREE Questions.

16. Explain the terms: a) Real time system b) Distributed System

17. Explain any two preemptive scheduling policies with examples

18. Discuss about Demand Paging.

19. Explain in detail the file allocation technologies: sequential, linked

20. Describe deadlock avoidance with suitable examples using algorithm

5. _____ permits allocation and deallocation of memory in random order.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc.(CS)

Date :20.11.2019

Course Code: 17PCSE22

Time: 2.00 am. to 5.00 pm.

Course Title : Computer Graphics &
Multimedia

Max Marks :75

SECTION – A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Best Answer.

- _____ is also called gas discharge display.
[a] LCD [b] LED
[c] FLAT PANEL [d] Plasma panel
- _____ is a device to interact with animated artificial objects.
[a] tablet [b] digitizer
[c] data glove [d] panels
- The line segment is visible if both end points are _____.
[a] 0001 [b] 1000 [c] 0000 [d] 0100
- _____ means to change the size of object.
[a] scaling [b] shearing
[c] translation [d] scale
- Orthographic projection is _____ type of projection.
[a] parallel [b] perspective
[c] geometric [d] oblique

6. In _____ space we determine the pixels which are illuminated by the visible surface.

- [a] image [b] projection
[c] object [d] window

7. The aspect ratio of VGA is _____.

- [a] 4:3 [b] 16:9
[c] 8:5 [d] 4:6

8. In edge detection edge is said to sudden change in _____.

- [a] frequency [b] intensity
[c] resolution [d] mask

9. Which of the following is vide file format?

- [a] Oggvorbis [b] Qggtherora
[c] .au [d] .PNG

10- _____ monitor descriptor characterizes 3d rotation parameters.

- [a] Camera motion [b] Motion trajectory
[c] Parametric motion [d] Motion activity

SECTION - B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) Explain any three graphical devices with block diagrams.

[OR]

b) Explain any one area filling algorithm of polygon.

12. a) How do we represent 2 D points in matrix form?

[OR]

b) Explain any two transformation methods to coordinate system.

13. a) Explain 3D rotation and 3D scaling in detail.

[OR]

b) How do we do back free removal after detection.

14. a) Explain the principle of CRT with block diagram.

[OR]

b) Explain the concept of basic image processing.

15. a) Write a note on Audio file format.

[OR]

b) Describe briefly about Lossy compression techniques.

SECTION - C

[3 X 10]

Answer Any THREE Questions.

16. Explain Bresenhanms line drawing algorithm.

17. Write a note on transformation.

18. Explain A-buffer algorithm.

19. Write the role of TEXT in graphics.

20. Explain about the Microphone and its types briefly..

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc. Computer Science

Date : 15.11.2019

Course Code: 17PCSC22

Time: 2.00 p.m. to 5.00 p.m.

**Course Title : Data Communication &
Networks**

Max Marks :75

SECTION – A

[10 X 1 = 10]

**Answer ALL the Questions.
Choose the Correct Answer.**

1. OSI Consists of _____ layers.
[a] Five [b] Six
[c] Seven [d] Eight
2. Modulation is the process of _____.
[a] Sending a file from one computer to another computer
[b] Converting digital signal to analog signal
[c] Converting analog signal to digital signal
[d] Echoing every character that is received
3. Base band is _____.
[a] Transmission of signal without modulation
[b] A signal all of whose energy is contained within a finite frequency range
[c] The simultaneous transmission of data to number of station
[d] All the above

4. Distributed queue dual bus is a standard for _____.
- [a] LAN [b] MAN
[c] WAN [d] LAN&MAN
5. ATM stands for _____.
- [a] Automatic Teller Machine
[b] Automatic Transfer Mode
[c] Asynchronous Transfer Mode
[d] Asynchronous Transaction Mode work
6. Frame relay is an example of a _____.
- [a] T-switching [b] Packet switching
[c] Circuit switching [d] Frame switching
7. Packets in the IP layers are called _____.
- [a] Data congestion [b] DataFlow
[c] Datagram [d] Data ID
8. IP version 6 has _____ address.
- [a] 32bits [b] 64bits
[c] 128bits [d] variable
9. POP stands for _____.
- [a] Pre Office Protocol [b] Pre Order Protocol
[c] Post Office Protocol [d] Post Order Protocol
10. HTTP functions like a combination of _____ & _____.
- [a] TCP , SMTP [b] FTP , SMTP
[c] POP , SMTP [d] POP ,FTP

SECTION – B
Answer ALL the Questions.

11. a) Explain about Network Topology.
[OR]
b) Describe about Transmission Media.
12. a) Explain FDDI.
[OR]
b) Describe Ethernet technologies.
13. a) Explain about Internetworking protocol.
[OR]
b) Explain about Routing Principles.
14. a) Describe about wireless LAN Requirements.
[OR]
b) Designing wireless LAN layout.
15. a) Explain about Telnet
[OR]
b) Explain about Domain Name System.

SECTION – C
Answer any THREE Questions.

[5 X]

[3 X 10]

16. What are the classifications of transmission media?
17. Discuss Point-to-Point Protocols.
18. Compare ISDN, ATM and frame relay.
19. Explain TCP Implementation Policy Options.
20. Discuss about the SNMP architecture.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc., Computer Science

Date : 14.11.2019

Course Code: 17PCSC31

Time: 10.00 am. to 1.00 pm.

Course Title : Software Engineering

Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

- The spiral model of software development
 - Ends with the delivery of the software product
 - Is more chaotic than the incremental model
 - Includes project risks evaluation during each iteration
 - All of the above
- Which of these is not one of the phase names defined by the unified process model for software development?
 - Inception phase
 - Elaboration phase
 - Construction phase
 - Validation phase
- Which one of the following is not the input and output domain analysis.
 - Technical literatures
 - Existing application
 - Customer surveys
 - Class standards

4. Requirements models depict software in which three domains?
- [a] architecture, interface, component
 - [b] cost, risk, schedule
 - [c] information, function, behaviour
 - [d] None of the above
5. Which of the following can be used to represent the architectural design of a piece of software?
- [a] Dynamic models
 - [b] Functional models
 - [c] Structural models
 - [d] None of the above
6. Coupling is a qualitative indication of the degree to which a module
- [a] can be written more compactly
 - [b] focuses on just one thing
 - [c] is able to complete its function in a timely manner
 - [d] is connected to other modules and the outside world.
7. When using structured design methodologies the process of stepwise refinement is unnecessary.
- [a] True
 - [b] False
 - [c] Option - C
 - [d] Option - D
8. Acceptance tests are normally conducted by the
- [a] developer
 - [b] end users
 - [c] test team
 - [d] systems engineers

9. Black-box testing attempts to find errors in which of the following categories
- [a] incorrect or missing functions
 - [b] interface errors
 - [c] Performance errors
 - [d] a,b and c
10. Which of these techniques is not useful for partition testing at the level
- [a] attribute-based partitioning
 - [b] category-based partitioning
 - [c] state-based Partitioning
 - [d] Option - D

SECTION - B

Answer ALL the Questions.

11. a) What framework activities are used during personal and team model? Discuss.
- [OR]
- b) Explain about Spiral mode.
12. a) What are the restraining factors considered in system model? Explain.
- [OR]
- b) Write any five distinct functions accomplished in engineering Explain.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc., Computer Science

Date : 14.11.2019

Course Code: 17PCSC31

Time: 10.00 am. to 1.00 pm.

Course Title : Software Engineering

Max Marks :75

SECTION – A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

1. The spiral model of software development
 - [a] Ends with the delivery of the software product
 - [b] Is more chaotic than the incremental model
 - [c] Includes project risks evaluation during each iteration
 - [d] All of the above
2. Which of these is not one of the phase names defined by the unified process model for software development?
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 - [b] Elaboration phase
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 - [b] Existing application
 - [c] Customer surveys
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[b] cost, risk, schedule
[c] information, function, behaviour
[d] None of the above
5. Which of the following can be used to represent the architectural design of a piece of software?
[a] Dynamic models [b] Functional models
[c] Structural models [d] None of the above
6. Coupling is a qualitative indication of the degree to which a module
[a] can be written more compactly
[b] focuses on just one thing
[c] is able to complete its function in a timely manner
[d] is connected to other modules and the outside world.
7. _____ method comes under Black Box Testing
[a] Conditional testing [b] Equivalence testing
[c] Data flow testing [d] Low testing
8. Acceptance tests are normally conducted by the
[a] developer [b] end users
[c] test team [d] systems engineers

9. Black -box testing attempts to find errors in which of the following categories
[a] incorrect or missing functions
[b] interface errors
[c] Performance errors
[d] a,b and c
10. Which of these techniques is not useful for partition testing at level?
[a] attribute-based partitioning
[b] category-based partitioning
[c] state-based Partitioning
[d] structure -based partitioning

SECTION - B

Answer ALL the Questions.

11. a) What framework activities are used during personal and model? Discuss.
[OR]
b) Explain about Spiral mode.
12. a) What are the restraining factors considered in system model
[OR]
b) Write any five distinct functions accomplished in engineering.
Explain.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc Computer Science

Date : 16.11.2019

Course Code: 17PCSC32

Time: 10.00 am to 1.00 pm.

Course Title : Web Technology

Max Marks :75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

- The Operator Used for Concatenation is _____
[a] && [b] +
[c] . [d] *
- A _____ Statement evaluates only one expression in a list of expressions based on a specific bit of matching code.
[a] while [b] if
[c] switch [d] for
- The _____ function determine the length of a String
[a] strlen() [b] strstr()
[c] strpos() [d] substr()
- The _____ function adds one or more elements to the end of an array
[a] reset() [b] array_push()
[c] array_pop() [d] array_merge()

5. A _____ is a Small amount of data stored by the user's browser with a request from a server.
- [a] session [b] function
[c] cookies [d] arguments
6. The _____ function enables to either set or retrieve a session ID
- [a] session [b] session-destroy
[c] session [d] session -id
7. The _____ function returns only a single character from a file when it is called
- [a] fgetc() [b] fgets()
[c] fread() [d] fseek()
8. The _____ is used to pass commands to the shell.
- [a] system() [b] passthru()
[c] exec() [d] popen()
9. _____ command is used to modify the contents of one or more columns in an existing
- [a] Insert [b] Select
[c] Delete [d] Update
10. _____ datatype is used to create list of items.
- [a] CHAR [b] BLOB
[c] ENUM [d] LONGBLOB

SECTION - B

Answer ALL the Questions.

11. a) Write about the Super global variables
[OR]
b) Illustrate Switch statement
12. a) Discuss about Creating an object.
[OR]
b) Discuss about the size off() and for each() function
13. a) Define the concept of Setting a Cookie with PHP
[OR]
b) Describe about the concept of file uploads.
14. a) Summarize about (i) Creating a directory (ii) Removing
[OR]
b) What does the following function do? Explain
(i) fwrite() (ii) file_put_contents()
15. a) Explain about the Table creation with the syntax.
[OR]
b) Describe Delete and update commands with example.

SECTION - C

Answer Any THREE Questions.

16. Discuss about the (i) Constants (ii) While Statement
17. List the Date & Time Functions in PHP.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M. Sc. Computer Science

Date : 19.11.2019

Course Code : 17PCSE31

Time: 10.00 am to 1.00 pm.

Course Title : Information Retrieval

Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

1. A model of information retrieval in which we can pose any query in which search terms are combined with the operators AND, OR and NOT
[a] Ad Hoc Retrieval [b] Ranked Retrieval Model
[c] Boolean Information Model [d] Proximity Query Model
2. The number of times that a word or term occurs in a document is called the
[a] Proximity Operator [b] Vocabulary Lexicon
[c] Term Frequency [d] Indexing Granularity
3. The formula used to estimate the vocabulary size of a collection is known as
[a] Zipf's law [b] Power law
[c] Heap's law [d] Compression ratio

4. An approach to computing scores in an IR system that pre-computes for each term in the dictionary, the set of documents with the highest weights for the term is
- [a] Champion list [b] Impact ordering
[c] Cluster pruning [d] Tiered indexes
5. _____ is a squared difference between the true conditional probability of d being in C
- [a] Baise [b] Bias
[c] Vaiance [d] Bayes
6. KNN is the example of _____ classifier
- [a] Non Linear [b] Linear
[c] Both a & b [d] Grouping
7. Clustering is the most common form of _____
- [a] supervised learning [b] unsupervised learning
[c] Both a& b [d] supervised listening
8. The minimum time complexity for training an SVM is $O(n^2)$. According to this fact, what sizes of datasets are not best suited for SVM.
- [a] Large datasets [b] Small datasets
[c] Medium sized datasets [d] Size does not matter
9. Which of the following is finally produced by Hierarchical Clustering?
- [a] final estimate of cluster centroids
[b] tree showing how close things are to each other
[c] assignment of each point to clusters
[d] all the above

10. Point out the correct statement:

- [a] The choice of an appropriate metric will influence clusters
[b] Hierarchical clustering is also called HCA
[c] In general, the merges and splits are determined in a particular manner.
[d] All the above

SECTION - B

Answer ALL the Questions.

11. a) Write about Positional postings and phrase queries.
[OR]
b) Describe about Wildcard queries.
12. a) Explain about the vector space model for scoring.
[OR]
b) Write a short notes on i) Champion lists & ii) Cluster Pruning.
13. a) Describe about Rocchio classification.
[OR]
b) Write about the Properties of Naive Bayes.
14. a) List out the Issues in the classification of text documents.
[OR]
b) Describe about Clustering in information retrieval.
15. a) Illustrate the Time complexity of HAC.
[OR]
b) Compare and contrast Single-link and complete-link clustering.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc., Chemistry

Date : 21.11.2019

Course Code: 17PCSN31

Time: 10.00 am to 1.00 pm.

Course Title : Internet and Web Programming Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

- TCP/IP stands for _____
 - Transmission control protocol/Internet Protocol
 - Transmission Connection Protocol/Internet Protocol
 - Transfer control protocol/Internet protocol
 - Transmission control protocol/intermedia protocol.
- The server computer runs special software called _____
 - Information
 - Protocol
 - Web server
 - Internet
- _____ tag starts text from new line skipping one line in between.
 -

 - <P>
 - <BODY>
 - <TITLE>
- HTML accepts _____ and _____ picture formats.
 - jpeg,mpeg
 - gif,jpg
 - picture,image
 - image,jpeg

5. Java script is traditional/embedded in to a standard _____ program.
- [a] java [b] HTML
[c] java script [d] JSP
6. _____ are used to read or modify the data, contained in an object.
- [a] Eval [b] Parseint
[c] Methods [d] parse float
7. Which is to access information about the browser that is executing the current scripts?
- [a] Navigator [b] Window
[c] Document [d] Location
8. The _____ is used to access all forms with documents.
- [a] Array [b] Applet
[c] Embeds [d] Forms array
9. _____ are implicit objects of JSP.
- [a] Page [b] Out
[c] Config [d] All of the above
10. _____ methods of response object is used to redirect the user to a different URL.
- [a] Forward [b] Redirect
[c] Link [d] Backward

SECTION - B

Answer ALL the Questions.

11. a) Explain about internet domains
[OR]
b) Define client IP address. Describe with example
12. a) Write about hyper text mark -up language
[OR]
b) Explain adding graphics to HTML documents
13. a) What are the advantages of Java script.
[OR]
b) Discuss about conditional checking
14. a) Explain embedding VB.Script code in an HTML doc
[OR]
b) List and define conditional statements.
15. a) Define JSP cookies and explain
[OR]
b) Explain subroutines.

SECTION - C

Answer Any THREE Questions.

16. Give a brief overview of TCP/IP and its services.
17. Explain Web client/Browser.

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G.T.N. ARTS COLLEGE (AUTONOMOUS)

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc., Computer Science

Date : 21.11.2019

Course Code : 17PCSE32

Time: 10.00 am to 1.00 pm

Course Title : Cryptography and
Network Security

Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

1. _____ is designed to protect data from modification, insertion, and deletion.

[a] Data integrity

[b] Authentication

[c] Access Control

[d] Data Confidentiality

2. A _____ parallels the tradition cipher for characters.

[a] Block Cipher

[b] D-box

[c] S-box

[d] statistical attack

3. _____ means a small change in the plaintext should create a significant change in the ciphertext

[a] S-Boxes

[b] D-Boxes

[c] Avalanche effect

[d] Completeness effect

4. A lock in AES is a group of _____ bits.
 [a] 64 [b] 256
 [c] 112 [d] 128
5. In symmetric-Key cryptography, _____ are manipulated.
 [a] symbols [b] characters
 [c] images [d] numbers
6. In RSA, P and Q must be at least _____ bits; n must be at least 1024 bits.
 [a] 562 [b] 512
 [c] 652 [d] 256
7. SHS stands for _____
 [a] Secure Hash Standard [b] Safe Hash Standard
 [c] Safe Holy Standard [d] Secure Hash Structure
8. A digital signature needs a _____ system.
 [a] public key [b] private key
 [c] symmetric key [d] asymmetric key
9. FRR stands for _____
 [a] False Rejection Rate [b] False Repetition Rate
 [c] False Rejection Rate [d] False Rejection Routine
10. A session symmetric key between two parties is used _____
 [a] twice [b] thrice
 [c] five times [d] only once

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SECTION - B
Answer ALL the Questions.

11. a) What are the three goals of security in non cryptanalytic?
 Describe
 [OR]
 b) Write about substitution ciphers.
12. a) Write note on the types of transformation
 i) substitution ii) permutation iii) mixing
 [OR]
 b) Describe general design of AES encryption cipher
13. a) Describe the Asymmetric key cryptosystem.
 [OR]
 b) Write about message authentication
14. a) Write note on SHA-512 message preparation.
 [OR]
 b) What are the security services are in digital signature?
15. a) Describe about fixed password
 [OR]
 b) Write note two attacks of Diffie-Hellman attacks.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc.(CS)

Date : 14.11.2019

Course Code: 17PCSC41

Time: 2.00 pm. to 5.00 pm.

Course Title : Digital Image Processing

Max Marks :75

SECTION – A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Best Answer.

1. Cone vision is called _____ or bright light vision.
[a] photopic [b] scotopic
[c] chromatic [d] dim light
2. Digitizing the coordinate values is called _____.
[a] quantization [b] sampling
[c] intensity [d] spatial
3. Averaging filters are also known as _____ filters.
[a] mask [b] low pass
[c] high pass [d] band pass
4. Smoothing directly on the image itself using spatial filters are called
[a] band pass [b] windows
[c] pels [d] mask
5. _____ filter is works well for salt noise.
[a] Arithmetic mean [b] Geometric mean
[c] Order statistics [d] Harmonic mean

6. The harmonic mean filter fails for _____ noise.

- [a] salt [b] impulse
[c] uniform [d] peper

7. A _____ is a device or program that is capable of both encoding and decoding

- [a] coder [b] codec
[c] mapper [d] digitizer

8. The most widely used expansion functions for wavelet based compression are _____ wavelets.

- [a] mean [b] biorthogonal
[c] uniform [d] optimum

9. MAT LAB stores most data in arrays of class _____.

- [a] double [b] int
[c] unit6 [d] unit16

10. _____ is the number of bits per screen pixel.

- [a] Screen bit depth [b] Screen color resolution
[c] Gray intensity [d] Color approximation

SECTION – B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) What are the components of an Image Processing System?

[OR]

b) Explain in detail about some Basic relationships between pixels.

12. a) Write a brief history about the fundamentals of Spatial filtering.

[OR]

13. a) What do you mean by Adaptive and Order Static filtering?
[OR]

b) Explain about Wiener filtering.

14. a) Write about Image compression coding methods:

- (i) Huffman coding,
(ii) Golomb coding and
(iii) LZW coding.

[OR]

b) Write a notes on Region based segmentation

15. a) Write a notes on Image Processing Toolbox.

[OR]

b) How to detect Point, Line and Edge using Mat Lab?

SECTION – C

Answer Any THREE Questions.

16. Explain in detail about the Image Sampling and Quantization.

17. How to smooth and sharp the images using spatial filtering?

18. Write a brief notes on Periodic noise reduction by Frequency filtering.

19. Discuss about the Basic Compression methods.

20. What are the various Image processing Techniques used?
Explain briefly.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M. Sc. Computer Science

Date : 16.11.2019

Course Code: 17PCSC42

Time: 2.00 pm. to 5.00 pm.

Course Title : Big Data Analytics

Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

- The number of columns is referred to as the ____ of a relation.
[a] Degree [b] Cardinality
[c] Constraint [d] Tuple
- _____ refers to biases, noise and abnormality in data.
[a] Validity [b] Veracity
[c] Volatility [d] Variability
- A collection of independent computers that appear to its users as a single coherent system is _____.
[a] Shared Systems [b] In-memory Systems
[c] Distributed Systems [d] Parallel Systems
- CAP theorem is also called as _____ theorem.
[a] Symmetric [b] Massive Parallel
[c] Real- Time [d] Brewer

5. Hadoop is _____ based flat structure.
- [a] Array [b] Tree
[c] Node [d] Graph
6. _____ is an open-source framework managed by Apache software foundations.
- [a] HDLC [b] Hadoop
[c] Map Reduce [d] Doug cutting
7. Partitioner phase belongs to _____ task.
- [a] Reduce [b] Combine
[c] Map [d] Compress
8. The default meta store for Hive is _____.
- [a] Web Logs [b] Derby
[c] System Catalog [d] Hive Database
9. _____ is an example for unsupervised learning.
- [a] Collaborative Filtering [b] Association Rule Mining
[c] Decision Tree [d] Clustering
10. _____ is a user-based recommendation algorithm.
- [a] Supervised Learning [b] Unsupervised learning
[c] Collaborative Filtering [d] k-means algorithm

SECTION - B

Answer ALL the Questions.

- 11.a) Describe Big Data with its characteristics and evolution.
- [OR]
- b) Explain the various challenges with big data.
- 12.a) What is Big Data Analytics?
- [OR]
- b) Write short notes on Data Science.
- 13.a) What is NoSQL? and where is it used?
- [OR]
- b) Discuss the various key aspects of Hadoop.
- 14.a) Explain the Reducer phase of Map task.
- [OR]
- b) What is Hive? and explain its various features.
- 15.a) Define machine learning and classify its categories.
- [OR]
- b) What are the steps involved in k-means algorithm?

SECTION - C

Answer Any THREE Questions.

16. Explain a typical data warehouse environment with a neat diagram.
17. Illustrate on Shared Nothing Architecture and its advantages.
18. Describe about HDFS (Hadoop Distributed File System).
19. Discuss on Hive Database and Tables with query examples.
20. Explain in detail about Decision Tree.

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END SEMESTER EXAMINATION - APRIL 2020

Programme : M.Sc. Computer Science

Date : 16.09.2020

Course Code : 17PCSC41

Time : 10.00 am to 1.00 pm

Course Title : Digital Image Processing

Max. Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer:

- A continuous image is digitized at _____ points
 - Random
 - Vertex
 - Contour
 - Sampling
- The type of Interpolation where the intensity of the FOUR neighbouring pixels is used to obtain intensity a new location is called _____
 - Cubic interpolation
 - Nearest neighbour interpolation
 - Bilinear interpolation
 - Bicubic interpolation
- Region of interest(ROI) operations is commonly called as _____
 - Shading correction
 - Masking
 - Dilation
 - None of the mentioned

in a dark image, the components of histogram are concentrated on which side of the grey scale.

- [a] High
- [b] Medium
- [c] Low
- [d] Evenly distributed

What are the undesirable side effects of averaging filters?

- [a] Blurred edges
- [b] Blurred image
- [c] No side effects
- [d] Loss of sharp transitions

The process of moving a filter mask over the image and computing the sum of products at each location is called as _____.

- [a] Convolution
- [b] Correlation
- [c] Linear spatial filtering
- [d] Non linear spatial filtering

Compressed image can be recovered back by _____.

- [a] Image enhancement
- [b] Image decompression
- [c] Image contrast
- [d] Image equalization

Shannon's theorem is also called

- [a] Noiseless coding theorem
- [b] Noisy coding theorem
- [c] Coding theorem
- [d] Noiseless thorem

The ellipord command is used for _____

- [a] FIR filter design
- [b] IIR filter design
- [c] Both IIR and FIR filter design
- [d] No such command

The freqz() command returns _____

- [a] A set of frequencies
- [b] Frequency response
- [c] No such command
- [d] Phase plot

SECTION - B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) Discuss all the steps in digital image processing
[OR]
b) How an image is quantized? Explain. What is the effect on quantization level if it is reduced?
12. a) Explain low pass filtering and high pass filtering performance in frequency domain give an image.
[OR]
b) What is contrast stretching, intensity level slicing in an image processing?
13. a) How image restoration is performed using weiner filtering?
[OR]
b) Give the two levels of adaptive median filtering. Explain its algorithm.
14. a) How vector quantization approach is used for compression?
[OR]
b) Write about image segmentation using region growing technique.
15. a) Write about MATLAB tools used for import, export and conversion.
[OR]
b) Brief about any one image processing technique.

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END SEMESTER EXAMINATION - APRIL 2020

Programme : M.Sc. Computer Science

Date : 17.09.2020

Course Code: 17PCSC42

Time: 10.00 am to 1.00 pm.

Course Title : Big Data Analytics

Max. Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Best Answer.

1. The number of rows or records in a relation is called the _____ of a relation.
[a] Degree [b] Cardinality
[c] constraint [d] tuple
2. _____ refers to the accuracy and correctness of the data.
[a] Veracity [b] Validity
[c] Volatility [d] Variability
3. Eventual consistency is a consistency model used in distributed computing to achieve high _____.
[a] Availability [b] Scalability
[c] Consistency [d] Security

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc., Computer Science

Date : 15.11.2019.

Course Code: 17PCSC12

Time : 10.00 am. to 1.00 pm.

Course Title : Digital Principles and
Computer Organization

Max Marks : 75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

1. A sequence of instructions for the computer is called _____
[a] Program [b] fetching
[c] information [d] compiler
2. _____ device contain several independent gates in a single package.
[a] IC [b] SSI
[c] VLSI [d] TTL
3. An _____ is a micro-operation that shifts a signed binary number to the left or right.
[a] arithmetic shift [b] shift-right
[c] shift-left [d] circular shift
4. The accumulator registers is a general purpose _____ register.
[a] Processor [b] Input
[c] Output [d] Address

5. The symbols ORG, DEC, and END, are called _____
- [a] pseudo instructions [b] registers
[c] operations [d] origins
6. The _____ field of the microinstruction select one of the status bits in the second multiplexer.
- [a] ADD [b] ROM
[c] CD [d] BR
7. SISD is _____
- [a] Single instruction stream, single data stream
[b] Single instruction stream, single data structure
[c] Single instruction structure
[d] Single data Stream
8. Identify the floating-point hardware device _____
- [a] ABC 8231 [b] Intel 8230
[c] Motorola 8233 [d] DEC 5000
9. The _____ contains an electronic gun that sends an beam to phosphorescent screen
- [a] CPU [b] CRT
[c] Interface [d] Plotters
10. The calculated and received _____ should be equal for error-free messages.
- [a] LRC [b] CRC
[c] duplex [d] simplex

SECTION - B

Answer ALL the Questions.

11. a) Explain about De Morgan's theorem.
[OR]
b) Explain about Shift Registers.
12. a) Explain about Register Transfer.
[OR]
b) Explain about Arithmetic Logic Shift Unit.
13. a) What are the rules for the Assembly Language?
[OR]
b) Write about the following instructions.
i) Three Addresses ii) Two-Addresses
14. a) Explain about RISC Pipeline
[OR]
b) Explain about Addition and Subtraction with Signed-Magnitude.
15. a) Explain about Main Memory.
[OR]
b) Explain about Memory Protection.

SECTION - C

Answer Any THREE Questions.

16. Explain about Memory Unit.

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END SEMESTER EXAMINATION - NOVEMBER 2019

Programme : M.Sc. Computer Science

Date : 18.11.2019

Course Code : 17PCSC13

Time: 10.00 am to 1.00 pm

Course Title : Data Structures and Algorithm Max.Marks :75

SECTION - A

[10 X 1 = 10]

Answer ALL the Questions.

Choose the Correct Answer.

1. A binary search whose left subtree and right subtree differ in height atmost 1 unit is called
 - [a] AVL tree
 - [b] Red-black tree
 - [c] Lemma tree
 - [d] None of the above
2. _____ is not the component of data structure
 - [a] Operations
 - [b] Storage structures
 - [c] Algorithms
 - [d] None of the above
3. Consider a hash table of size $m=10000$ and the hash function $h(k)=\text{floor}(m(KA \text{ mod } 1))$ for $A=(\sqrt{5}-1)/2$. The Key 123456 is mapped to location _____
 - [a] 46
 - [b] 41
 - [c] 43
 - [d] 48

4. Which of the following is the correct function definition for linear probing?

[a] $F(i)=1$

[b] $F(i)=i$

[c] $F(i)=i^2$

[d] $F(i)=i+1$

5. Which of the following algorithms solves the all-pair shortest path problem?

[a] Floyd's algorithm

[b] Prim's algorithm

[c] Dijkstra's algorithm

[d] Warshall's algorithm

6. If locality is a concern, you can use _____ to traverse the graph.

[a] breadth first search

[b] depth first search

[c] either BFS or DFS

[d] None of these

7. Which of the following sorting algorithm will perform the worst if the numbers are ordered in the opposite form?

[a] Quick sort

[b] Radix

[c] Bubble

[d] Selection

8. Which of the following is not true about comparison based sorting algorithms?

[a] The minimum possible time complexity of a comparison based Sorting Algorithm is $O(n \log n)$ for a random input array

[b] Any comparison based on sorting algorithm can be made stable by Using position as a criteria when two elements are compared.

[c] Counting sort is not a comparison based sorting algorithm

[d] Heap sort is not a comparison based sorting algorithm

9. Huffman codes are the applications of _____ with minimal weighted external path length obtained by an optimal set

[a] BST

[b] MST

[c] Binary tree

[d] Weighted Graph

10. Find the odd one out from the following categories of algorithms

[a] TVSP

[b] N-Queens

[c] 15-puzzle

[d] Bin-tracking

SECTION - B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) Write the General Rules for Algorithm Analysis

[OR]

b) List out the properties of a B-tree

12. a) What are the applications of Priority Queues?

[OR]

b) Describe the concept of Binary Heap with an example program

13. a) Describe Heapsort with an algorithm

[OR]

b) Write short notes on (i) Multiway Merge (ii) Polyphase Merge

14. a) Explain Biconnectivity

[OR]

b) Explain Minimum Spanning Tree. Give examples.

5. Relational schema R is in 1NF if domain of all the attributes are _____

[a] valid

[b] invalid

[c] atomic

[d] good

6. The object-relational data model extends _____ by providing a richer type system including collection types and object orientation.

[a] Object model

[b] data model

[c] relational data model

[d] transaction

7. All or none property refers to _____

[a] reliability

[b] durability

[c] atomicity

[d] consistency

8. _____ is a set of rules that state, when a transaction may lock and unlock each data item in the database

[a] locking protocol

[b] timestamp based protocol

[c] Validation based protocol

[d] look ahead protocol

9. In _____ parallelism, different queries/transaction execute in parallel with one another

[a] Intraquery Parallelism

[b] I/O parallelism

[c] Interquery Parallelism

[d] Query Parallelism

10. _____ transactions are those that access and update data in only one local database.

[a] global

[b] local

[c] data

[d] table

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05/12/20
Dr. Manjani Mahesh

Dr. Manjani Mahesh
12.12.2021

2. M. A. - 11/12
5.12.2020.

Associate Professor, PG & Research

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SECTION - B

[5 X 7 = 35]

Answer ALL the Questions.

11. a) Write about Database System Applications [OR]

b) Write note on weak entity sets

12. a) List out the Fundamental Relational Algebra operations [OR]

b) Write note on Aggregate functions.

13. a) Discuss about Boyce Codd Normal form [OR]

b) Write about Structured type in SQL.

14. a) How to implement Transaction Atomicity and Durability? [OR]

b) Write note on 'Thomas' write rule.

15. a) Discuss about Intraquery parallelism [OR]

b) Write note on Data Replication.

SECTION - C

[3 X 10 = 30]

Answer Any THREE Questions.

16. Discuss about the purpose of Database System.

17. Write in detail about the Fundamental Relational Algebra Operations.

18. Write in detail about Functional Dependency Theory.

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