SECTION – A

Answer ALL Questions   (**10 × 1 = 10**)

1. Sending packets to a group of stations is known as _____

   a) broadcasting   b) multicasting

   c) uncasing   d) point-to-point

2. The internet is divided into over 200 top level _____

   a) domain   b) websites   c) WebPages   d) crawlers

3. A network that requires human intervention of route signals is called a

   _____

   a) bus network   b) ring network

   c) star network   d) T- switched network

4. Which layer of OSI model is responsible for creating and recognizing

   frame boundaries?

   a) Physical layer.   b) Data link layer.

   c) Transport layer.   d) Network layer.

5. In OSI network architecture the dialogue control and token management

   are responsibilities of_____

   a) session layer   b) network layer

   c) transport layer   d) data link layer.

6. When a host on network A sends a message to a host on network B, which address does the router lookat?

   a) Port   b) Physical   c) IP   d) Tunnel

7. The inner core of an optical fiber is _____ in composition.

   a) glass or plastic   b) bimetallic

   c) copper   d) liquid

8. 10 Base 5 uses the _____ cable.

   a) thick coaxial   b) thin coaxial

   c) twisted pair   d) fiber optic

9. The simultaneous transmission of data to a number of stations is known

   as _____

   a) broadcast   b) bandwidth

   c) analog transmission   d) aloha

10. A modem is connected in between a telephone line and a _____

   a) network   b) computer

   c) communication adapter   d) serial port

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. List down any four goals of network.

12. Name the Service primitives of Connection Oriented service.

13. Define the Maximum Data Rate of a Channel

14. Recall and note down the major components of telephone system.

15. List down the framing methods.

16. What is UDP?

17. Label the components in the architecture of the email system.

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Classify the uses of Computer Networks.

                   [OR]

   b) Summarize the Relationship of Services to Protocols.

19. a) Explain about Coaxial Cable with neat diagram.

                   [OR]

   b) Illustrate the concept of Wavelength Division Multiplexing.

20. a) Explain the concept of Framing with example.

                   [OR]

   b) Outline the working of the error-detecting code: Checksums.

21. a) Interpret the functioning of the Store-and-Forward Packet Switching.

                   [OR]

   b) Compare Virtual-Circuit and User Datagram Networks.

22. a) Summarize the methods in Hypertext Transfer Protocol.

                   [OR]

   b) Classify the two Fundamental Cryptographic Principles.

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Identify the technology behind the OSI reference model.

24. Apply Switching techniques in network and explain their types.

25. Examine in brief about Two Types A sliding window protocols with

   neat diagram.

26. Model a TCP Segment Header and Explain it.

27. Utilize Public-Key Signatures in network security and describe it's

   working.

✠ ✠ ✠ ✠ ✠

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: Third Semester: Paper – II
COMPUTER GRAPHICS
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. _____ environments used to determine how the operators
of a vehicle are affected by certain motions.

 a) Wireframe display   b) Virtual Reality

 c) operating system   d) Architectural CAD

2. _____ no. of frames per second are required to playback
animation in a video monitor

 a) 36   b) 30   c) 24   d) 18

3. The cartesian slope -intercept equation for a straight line is _____

 a) $y = m.x + b$ b) $y = b.x + m$

 c) $y = x.x + m$ d) $y = b + m.m$

4. In bresenhan's algorithm error term is initialized to _____

 a) 0   b) 1   c) -1/2   d) 2

5. Translation of a two-dimensional point can be done by adding _____

 a) Translation distances   b) Translation difference

 c) Translation points   d) Repositioning

6. To generate a rotation, _____ must be specified

a) rotation angle $^\theta$ b) Distances dx and dy

c) rotation   d) all the above

7. An area on a display device to which a window is mapped is called a___

a) Window   b) Graphics card   c) Animation   d) View port

8. Identify line clipping algorithms from the following:

a) Cohen-Sutherland algorithm   b) Liang-Barsky clipping

c) Nicholl-Lee-Nicholl clipping   d) all the above

9. The types of projection are _____

a) Perpendicular and perspective   b) parallel and perpendicular

c) Parallel and perspective   d) none of the above

10. _____ is used to add realism to displays by setting surface intensity

of objects according to light conditions in a scene

a) surface identification   b) surface rendering

c) exploded view   d) 3D image

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. List any 2 areas of application of computer graphics.

12. Recall any 2-line attributes.

13. Name the 2-line drawing algorithms.

14. Define 'Rotation' and 'Scaling'.

15. What is reflection? How is it generated?

16. What do you mean by the term 'Clipping'?

17. How does Parallel Projection generate a view of a three-dimensional

scene?

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Explain any 5 input devices used for providing data input to graphics

applications.

[OR]

b) Outline the working of 'Raster Scan Displays' with neat diagram.

19. a) Explain the various character attributes with example.

[OR]

b) Illustrate in detail DDA line drawing algorithm.

20. a) Demonstrate how a 2-D translation is applied to an object.

[OR]

b) Show how 'Shear' distorts the shape of an object.

21. a) Summarize the 'Cohen Sutherland Line Clipping' procedure.

[OR]

b) Interpret how the graphics input functions operate in various input

modes.

22. a) Outline any 5 Three-Dimensional display methods with example.

[OR]

b) Explain the concept of 'Three-Dimensional Scaling' with example.

Answer any THREE Questions   **(3 × 10 = 30)**

23. Identify the various components of refresh CRT and explain its basic

    operations with diagram.

24. Construct the 'Mid-Point Circle' algorithm to generate a circle.

25. Apply the reflection transformation to a 2-D object.

26. Utilize the 'Sutherland Hodgeman Clipping' procedure to perform

    Polygon Clipping.

27. Apply the Three-Dimensional translation and rotation to an object with

    example.

𝕐 𝕐 𝕐 𝕐 𝕐

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: Fifth Semester: Paper – I
PYTHON PROGRAMMING
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   (10 × 1 = 10)

1. What is the maximum possible length of an identifier?

   a)16   b) 32   c) 64   d) None of these above

2. How many control statements python supports?

   a) 4   b) 5   c)3   d) None of the these

3. What is the method inside the class in python language?

   a) Object   b) Function   c) Attribute   d) Argument

4. Which of the following is correctly evaluated for this function?

   pow(x,y,z)

   a) (x**y) / z   b) (x / y) * z   c) (x**y) % z   d) (x / y) / z

5. How we install Numpy in the system?
   a) install numpy   b) pip install python numpy
   c) pip install numpy   d) pip install numpy python

6. Which of the following is the essential argument to pass in full() function
   of Numpy array ?
   a) shape   b) value
   c) Both of the above   d) None of the above

7. SciPy stands for?
   a) science library   b) source library
   c) significant library   d) scientific library

8. The model will be trained with data in one single batch is known as?

   a) Batch learning   b) Offline learning

   c) Both A and B   d) None of the above

9. What is a variable defined inside a function referred to as?

   a) A global variable   b) A volatile variable

   c) A local variable   d) An automatic variable

10. Which is the following is an Arithmetic operator in Python?

   a) // (floor division) operator   b) & (binary and) operator

   c) ~ (navigation) operator   d) >> (right shift) operator

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What do you mean by runtime error?

12. Show the use of type coercion

13. Tell me the reason, Why the string is immutable?

14. List the forms of range function.

15. How will you clone a list?

16. What do you mean by sparse matrix?

17. Recall the format of open function

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Illustrate three kinds of errors occur in the program

[OR]

   b) Explain any two operations on string in Python.

19. a) Demonstrate any three math functions in Python.

[OR]

   b) Interpret the use of a return statement with an example.

20. a) Show the working of while statement with an example.

[OR]

   b) Show the concept of String slice.

21. a) Summarize the creation of tuple and its usage.

[OR]

   b) Interpret the use of a random package.

22. a) Explain any four dictionary methods in detail.

[OR]

   b) Illustrate how the exception is handled in Python.

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Identify the features in Python.

24. Develop a new function and use that function with its proper syntax.

25. Apply the concept of encapsulation and generalization on a function in Python.

26. Construct a list and apply any five operations on the list.

27. Develop a Python code for writing contents into a file & read them.

🕊 🕊 🕊 🕊 🕊

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: Fifth Semester: Paper – II
JAVA PROGRAMMING
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   (10 × 1 = 10)

1. Wrapper class is a wrapper around a _____ data type.

   a) normal.   b) central.   c) primitive.   d) concrete.

2. Which of the tool is used to compile java code?

   a) java   b) javac   c) javacompute   d) javaend

3. Methods having same name and differ type signature are called

   _____methods.

   a) overriding.   b) over read.   c) super.   d) overloading.

4. The data or variables, defined within a class are called _____ variables.

   a) object.   b) class.   c) instance.   d) schema.

5. Which of these keywords is used by a class to use an interface defined

   previously?

   a) import.   b) imports.   c) implements. d) implement.

6. Inheritance allows _____ of sub classes.

   a) creation.   b) updation.   c) view.   d) display.

7. The methods wait() and notify() are defined in?

   a) java.lang.String.   b) java.lang.Object.

   c) java.lang.Runnable.   d) java.lang.Thread.

8. Which of the following is NOT an example of a data type?

 a) int.   b) public.   c) Button.   d) void.

9. An _____ is a special kind of Java program that is designed to be

 transmitted over the internet.

 a) viewlet   b) applet.   c) servlet.   d) object.

10. Which of these Exceptions is thrown by remote method?

 a) RemoteException   b) InputOutputException

 c) RemoteAccessException   d) RemoteInputOutputException

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What is meant by Object Oriented Programming?

12. What is Garbage Collection? How it is called?

13. Define Static Variable and Static method.

14. What is dynamic method dispatch?

15. What is the difference between sleep () and wait ()?

16. Why Synchronization is important?

17. What is Stream Class? How they can be classified?

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Compare automatic type conversion and type Casting.

[OR]

 b) Discuss with if statement with suitable example.

19. a) What are command line arguments? Explain.

[OR]

 b) Write a Java program to illustrate Method Overloading.

20. a) How can we call a superclass constructor using super keyword?

[OR]

 b) How to extend the Interface? Explain.

21. a) Examine about try with multiple catch with appropriate example.

[OR]

 b) Describe Built in Exception with example.

22. a) Illustrate about Byte Stream classes in detail with example.

[OR]

 b) What are the possible ways for running an applet? Explain.

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Explain control statements with suitable examples.

24. Illustrate the various string buffer methods with examples.

25. Define package and also examine about the creating and accessing a package.

26. Analyze the concept of Multithreading in detail with examples.

27. How to pass parameters to applet? Enumerate with an example.

𝅝 𝅝 𝅝 𝅝 𝅝

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: Fifth Semester: Paper – III
SOFTWARE ENGINEERING
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   (10 × 1 = 10)

1. What does the study of an existing system refer to?

   a) Details of DFD   b) Feasibility Study

   c) System Analysis   d) System Planning

2. Abbreviate CMMI

   a) Capability Model Maturity Integration

   b) Capability Maturity Model Integration

   c) Capability Model Maturity Instructions

   d) Capability Maturity Model Instructions

3. The user system requirements are the parts of which document?

   a) SDD   b) SRS   c) DDD   d) SRD

4. Expand CASE

   a) Cost Aided Software Engineering

   b) Computer Aided Software Engineering

   c) Control Aided Software Engineering

   d) Computer Augmented Software Engineering

5. _____ addresses the behavioural aspects of the program

   architecture as a result of an event.

a) Process model
b) structural model

c) dynamic model
d) framework model

6. At highest level, a DFD is referred to as _____

a) Scope Diagram
b) Level 1 DFD

c) Level 2 DFD
d) Context Diagram

7. Which of the below is not a part of the Test Plan?

a) Schedule   b) Risk   c) Incident reports   d) Entry and exit criteria

8. Which of the below testing is executed without documentation and planning is known as?

a) Regression testing
b) Adhoc testing

c) Unit testing
d) Functional testing

9. If a Direct approach to software project sizing is taken, size can be measured in

a) LOC   b) FP   c) LOC and FP   d) Component based

10. _____ risks threaten the quality and timeliness of the software to be produced

a) project   b) technical   c) business   d) known

SECTION – B

Answer any FIVE Questions   (5 × 2 = 10)

11. What are the layers of software engineering?

12. List out the steps in component based develop model

13. Define data dictionary

14. What is validation?

15. Why is architecture important?

16. What is system testing?

17. How do you identify risks?

SECTION – C

Answer ALL Questions   (5 × 5 = 25)

18. a) Discuss the activities of process framework
[OR]
b) Describe various umbrella activities

19. a) Discuss non-functional requirements
[OR]
b) Write a detailed note on Petri net with neat diagram.

20. a) Discuss in brief about the architectural design consideration
[OR]
b) Discuss in detail about various design concepts

21. a) Explain in brief about White Box Testing with example.
[OR]
b) Explain in detail about Unit Testing with example.

22. a) Describe about project scheduling
[OR]
b) Examine the concept of Risk Management

SECTION – D

Answer any THREE Questions   (3 × 10 = 30)

23. Explain waterfall model with neat diagram.

24. Describe about Structure System Analysis with example.

25. Narrate various architecture styles with example.

26. Explain COCOMO Model with example.

27. Explain any one of software implementation technique with example.

ॐ ॐ ॐ ॐ ॐ

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Elective Course: Fifth Semester: Paper – I
CLOUD COMPUTING
Under CBCS and LOCF – Credit 5

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   ($10 \times 1 = 10$)

1. What facet of cloud computing helps to guard against downtime and determinescosts?

  a) Service-level agreements

  b) Application programming interfaces

  c) Virtual private networks   d) Bandwidth fees

2. Point out the wrong statement.

  a) Data center operates under average loads

  b) Private cloud doesn't pooling of resources that a cloud computing provider can achieve

  c) Private cloud doesn't employ the same level of virtualization

  d) None of the mentioned

3. Which of the following is the best-known service model?

  a) SaaS   b) IaaS   c) PaaS   d) All of the mentioned

4. A _____ is a cloud computing service that is both hardware and software.

  a) service   b) platform

  c) model   d) all of the mentioned

5. Which of the following is related to the service provided by Cloud?

a) Ownership   b) Reliability

c) Sourcing   d) AaaS

6. Applications such as a Web server or database server that can run on a virtual machine image are referred to as _____

a) virtual server   b) virtual appliances

c) machine imaging   d) all of the mentioned

7. _____ dimension corresponds to two different states in the eight possible cloud forms.

a) Physical location of data   b) Ownership

c) Security boundary   d) None of the mentioned

8. The technology used to distribute service requests to resources is referred to as _____

a) load performing   b) load scheduling

c) load balancing   d) all of the mentioned

9. For the _____ model, the security boundary may be defined for the vendor to include the software framework and middleware layer.

a) SaaS   b) PaaS

c) IaaS   d) All of the mentioned

10. Which of the following is best suited for the analysis of an application's suitability to be ported to the cloud?

a) Service Attributes   b) Cloud Attributes

c) Application Attributes   d) All of the mentioned

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What is cloud computing?

12. What is distributed computing?

13. State any two-service provider of SaaS.

14. Illustrate password assurance testing.

15. What is COBIT?

16. Show the cloud social networking application with example.

17. What is CSA?

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Illustrate the basics of Cloud Computing.

[OR]

b) Show the advantages of Cloud computing with example.

19. a) Describe the evaluation of SaaS.

[OR]

b) Interpret the seven-step model of migration into a cloud with example.

20. a) Define the cloud cost management framework.

[OR]

b) Construct own task-based application model with example.

21. a) Interpret Hadoop and MapReduce.

[OR]

b) Write short notes on: i) Interoperability   ii) Portability

22. a) Outline the need for IT governance in cloud computing.

[OR]

b) "Virtual machine is secured". Is it true? Justify your answer

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Identify the different types of Clouds.

24. Enumerate the framework and anatomy to build Aneka clouds.

25. Describe various cloud storage with example.

26. Explain the commercial and business considerations in cloud

   computing.

27. Examine Change Management Maturity Model.

🕊 🕊 🕊 🕊 🕊

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.A. / B.Sc. Degree (Semester) Examinations, November 2021
Part – IV: Non-Major Elective Course: First Semester: Paper – I
INTRODUCTION TO INFORMATION TECHNOLOGY
Under CBCS and LOCF – Credit 2

Time: **2**Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   (**10 × 1 = 10**)

1. WWW uses the following protocol?

   a) http.   b) ftp.   c) www   d) SMTP.

2. The URL means

   a) use resource locator.   b) undefined resource locator

   c) uniform resource locator.   d) user defined locator.

3. Information is

   a) a collection of data   b) a processed data

   c) a text data   d) an audio/video data

4. WAN stands for

   a) wire and network   b) wire accessible network

   c) widely accessible network   d) wide area network.

5. DOM is an acronym for _____.

   a) document object model.   b) document object metrics

   c) digital object model.   d) digital object metrics

6. When was the first e-mail sent?

   a) 1963   b) 1969   c) 1971   d) 1974

7. First generation computers uses.

  a) cathode ray tube.   b) typewriter

  c) printers.   d) paper tapes

8. Computer performs calculations

  a) in accurately   b) accuratel.

  c) 1 million decimals   d) 2 decimals

9. The web page means

  a) plain page.   b) hyperlink

  c) designed page   d) pictures

10. A source program is written in

  a) high level language   b) English language

  c) machine language.   d) symbolic language

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. Define information system.

12. Expand IT and I/O.

13. List out the any four OS names?

14. What is Binary Numbers?

15. What is ALU?

16. What is Computer?

17. Type of memory in computer.

SECTION – C

Answer ALL Questions   **(3 × 9= 27)**

18. a) Explain the different computer network with types.?

[OR]

  b) Explain the followings: i) Multimedia   ii) WWW

19. a) Explain about the computer with types.

[OR]

  b) Briefly explain about types of operating system.

20. a) Explain about the memory with types.

[OR]

  b) Discuss briefly about storage media in a computer system?

SECTION – D

Answer any TWO Questions   **(2 × 14 = 28)**

21. Explain the usage of IT in Different fields.

22. Briefly discuss about the input device and output device

23. Discuss briefly about the keyboard descriptions in a computer system?

24. Explain the functional unit in a computer.

🕊 🕊 🕊 🕊 🕊

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – IV: Skill Based Course: Third Semester: Paper – I
OPERATING SYSTEM
Under CBCS and LOCF – Credit 2

Time: **2** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   (10 × 1 = 10)

1. Which of the following is not an operating system?

   a) Windows   b) Linux   c) Oracle   d) DOS

2. OS stands for

   a) Operating solve   b) Open Source

   c) Open System   d) Operating system

3. Which is the first program run on a computer when the computer boots

   up?

   a) System software   b) Operating system

   c) System operations   d) None of the above

4. Which of the following memory unit that processor can access more

   rapidly

   a) Main Memory   b) Virtual Memory

   c) Cache memory   d) Read Only Memory

5. What is the full name of the DSM?

   a) Direct system module   b) Direct system memory

   c) Demoralized system memory   d) Distributed shared memory

6. Who provides the interface to access the services of the operating system?

  a) API   b) System call   c) Library   d) Assembly instruction

7. What type of scheduling is round-robin scheduling?

  a) Linear data scheduling   b) Non-linear data scheduling

  c) Preemptive scheduling   d) Non-preemptive scheduling

8. Which of the following scheduling algorithms is preemptive scheduling?

  a) FCFS Scheduling   b) SJF Scheduling

  c) Network Scheduling   d) SRTF Scheduling

9. Which of the following operating system runs on the server?

  a) Batch OS   b) Distributed OS   c) Real-time OS   d) Network OS

10. What type of memory stores data in a swap file on a hard drive?

  a) Secondary memory   b) Virtual memory

  c) Low memory   d) RAM

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What is an Operating system?

12. What is the advantage of Multiprogramming?

13. What is Dual- Mode Operation?

14. How is the protection for memory provided?

15. What is a process?

16. Define deadlock.

17. What is the main function of the memory-management unit?

SECTION – C

Answer ALL Questions   **(3 × 9 = 27)**

18. a) List the various services provided by operating systems

                [OR]

  b) Explain different operating system structures with neat sketch

19. a) What are the three main purposes of an operating system?

                [OR]

  b) Explain the various types of system calls with examples.

20. a) List the steps needed to handle page fault.

                [OR]

  b) Explain about given memory management techniques.

  i) Partitioned allocation   ii) Paging

  iii) translation look-aside buffer.

SECTION – D

Answer any TWO Questions   **(2 × 14 = 28)**

21. Elaborate about the free space management on I/O buffering and blocking.

22. Discuss how the following pairs of scheduling criteria conflict in certain settings. i) CPU utilization and response time.   **(4 Marks)**

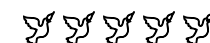 ii) Average turnaround time and maximum waiting time. **(5 Marks)**

  iii) I/O device utilization and CPU utilization.   **(5 Marks)**

23. Give an example of an application in which data in a file should be accessed in the following order

  i) Sequential **(7 Marks)**   ii) Random **(7 Marks)**

24. Analyze the backup and restore of a file system.

ℬ ℬ ℬ ℬ ℬ

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – IV: Skill Based Course: Fifth Semester: Paper – I
COMPETITIVE EXAMINATION FOR IT
Under CBCS and LOCF – Credit 2

Time: **2** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(75 × 1 = 75)**

1. Arrange the following words in a meaningful order:

   1. Reading   2. Composing   3. Writing   4. Printing

   a) 1,3,4,2   b) 2,3,4,1   c) 3,1,2,4   4) 3,2,4,1

2. Arrange the following words in a logical sequence.

   1. Application   2. Selection   3. Exam   4. Interview   5. Advertisement

   a) 1,2,3,5,4   b) 5,1,3,4,2   c) 5,3,1,4,2   d) 4,5,1,2,3

3. Arrange the following words in a meaningful order.

   1. Andra Pradesh   2. Universe   3. Tirupati   4. World   5. India

   a) 3,1,4,5,2   b) 1,3,5,4,2   c) 3,1,5,4,2   d) 3,1,2,4,5

4. A man walks 1 km to East and then he turns to south and walks 5 km. Again he turns to East and walks 2 km. After this he turns to North and walks 9 km. Now, how far is he from his starting point?

   a) 3 km   b) 4 km   c) 5 km   d) 7 km

5. If South-East becomes north and south becomes North-East and all the rest directions are changed in the same manner, the will be thee direction for west?

   a) North- East   b) North-West   c) South-East   d) South-West

6. You should save your computer from?

a) Viruses   b) Time Bombs   c) Worms   d) All of the above

7. Which is the layer of a computer system between the hardware and the user program

a) Operating environment   b) Operating system

c) System environment   d) None of the above

8. The operating system is the most common type of _____ Software

a) Communication   b) Application

c) System   d) Word Processing Software

9. What is the default file extension created by notepad?

a).doc   b) .html   c) .txt   d) .tiff

10. Which of the following is not the user file extension?

a).ppt   b).xls   c).sys   d) .doc

11. Who is the father of C language?

a) Bjarne Stroustrup   b) James A.Gosling

c) Dennis Ritchie   d) Dr.E.F.codd

12. In Java arrays are

a) objects   b) object references

c) primitive data type   d) None of the above

13. System class is defined in_____

a) java.util package   b) java.laang package

c) java.io package   d) java.awt package

14. 6:3 6::9 :?

a) 81   b) 98   c) 42   d) 56

15. Mother : Daughter :: father : ?

a) Son   b) Brother   c) Boy   d) Sister

16. 4,7,12,19, 28?

a) 49   b) 36   c) 30   d) 39

17. The hexa number 9AF convert to binary number is

a)100110101111   b)100111101101

c)100010001011   d)100100111100

18. In a class there are 20 boys & 15 girls. The ratio of boys to girls are

a) 4:3   b) 4:5   c) 3:9   d) 18:49

19. Java is a _____ language.

a) weakly typed   b) strongly typed

c) moderate typed   d) None of these above

20. Size of int java is

a) 16bit   b) 32bit   c) 64bit   d) 8bit

21. Exception generated in try block is caught in_____ block.

a) Catch   b) throw   c) throws   d) finally

22. Select from among the following character escape code which is not available in java.

a) \t   b) \a   c) \\b   d) \\v

23. How many primitive data types are there in java?

a) 6   b) 7   c) 8   d) 9

24. What is right way to initialize array?

a) int num [6]={2,4,12,5,45,5};   b) int n {}={2,4,12,5,45,5};

c) int n{6}={2,4,12} ;   d) int num (6)={2,4,12,5,45,5};

25. Which one of the following is a valid statement?

a) char[] c=new char();   b) char[] c=new char[5];

c) char[] c=new char(4);   d) char[] c=new char[];

26. ADS stands for_____

  a) Automatically Detect Settings   b) All Date System

  c) And Digit System   d) All of these

27. ISP is_____

  a) Internet Service Provider   b) Internet System Policy

  c) Initial System Plan   d) All of these

28. IC stands for_____

  a) Integrated Circuit   b) Initial Call

  c) Internal Cost   d) Initial Complex

29. Micro Computer is/ are_____

  a) Laptop or Notebook Computers   b) Car

  c) Mobile   d) TV

30. EDI stands for_____

  a) Electronic Data Interchange   b) E-Demand Internet

  c) Efficiency Data Internet   d) All of these

31. Which is/are main input devices of Computer?

  a) Digital Camera and Character Reader   b) Scanner

  c) Punch Card   d) Keyboard

32. Which is an eye of Computer?

  a) Scanner   b) Local Area Network System   c) Card   d) Board

33. Which is known as Micro Processor?

  a) Processor   b) First and Second generation   c) SX   d) DX

34. Which is not the feature of the Internet?

  a) Chat, Net Meeting and Telnet   b) Room

  c) Bulletin Board   d) WWW

35. A programming language is a language used to write_____
 a) Computer Programs   b) Production Programs and Systems
 c) Cost   d) Price

36. A computer is a machine that manipulates data according to_____

 a) Person   b) A list of instruction   c) Book   d) LAN

37. Errors in Computer Programs are called_____

 a) Lugs   b) Mistake related to computation   c) Bugs   d) Risk

38. Which is / are part of Computer Hardware?

 a) Auxiliary Memory Devices   b) Input Devices

 c) CPU   d) All of these

39. Processing is based on_____

 a) Manually, Mechanically and Electronically   b) Selection

 c) Plan   d) Cost

40. Which is/ are the tools of Computer System?

 a) Keyboard, Monitor and Printer   b) Network   c) C+   d) B++

41. MIS stands for_____

 a) Management Information System b) Money-in-System

 c) Most-in-System   d) Man-in-System

42. Which is Secondary Memory?

 a) RAM   b) Magnetic and Optical   c) ROM   d) All of these

43. Application Software is/ are_____

 a) World Processing   b) Graphics and Browsers

 c) Spreadsheet   d) All of these

44. Which is the first logic Programming language?

 a) Prolog   b) Systems Programming and Planning

 c) Algol 60   d) COBOL

45. CPU stands for_____

 a) Central Processing Unit   b) Cost Per Unit

 c) Cost Per Union   d) Control Processing Unit

46. ALU stands for_____

 a) All Logic Unit   b) Arithmetic and Logic Unit

 c) All-Live Unit   d) All-Logic Union

47. Each memory address represents_____

 a) One octet (8 Bits)   b) Two octet (16 Bits)

 c) Power   d) Cost

48. Analog Computer may be used in_____

 a) Electronic Watch   b) Car

 c) Management Information System   d) House

49. Which is/ are type of Network Topology?

 a) Bus Network   b) System Path and Network

 c) UVS   d) D+

50. Which one is the first search engine in internet

 a) Google   b) Archie   c) Altavista   d) WAIS

51. Which of the following programming language is used to create programs like applets?

 a) COBOL   b) C Language   c) Java   d) BASIC

52. Firewall in computer is used for

 a) Security   b) Data Transmission

 c) Authentication   d) Monitoring

53. Which of the following is not a database management software

 a) MySQL   b) Oracle   c) Sybase   d) COBOL

54. Number of layers in the OSI (Open Systems Interconnection) Model

 a) 9   b) 3   c) 7   d) 11

55. 1024 bit is equal to how many byte

 a) 1 Byte   b) 128 Byte   c) 32 Byte   d) 64 Byte

56. A mother is twice as old as her son. If 20 years ago, the age of the mother was 10 times the age of the son, what is the present age of the mother?

 a) 38 years   b) 40 years   c) 43 years   d) 45 years

57. Four years ago, a man was 6 times as old as his son. After 16 years he will be twice as old as his son. What is the present age of man and his son?

 a) 34, 9   b) 33, 7   c) 35, 5   d) 36, 6

58. The ratio of the ages of Minu and Meera is 4:2. If the sum of their ages is 6 years, find the ratio of their ages after 8 years.

 a) 8:6   b) 6:5   c) 6:4   d) 7:5

59. The ratio of the ages of Seeta and Geeta is 2:7. After 6 years, the ratio of their ages will be 1:2. What is the difference in their present ages?

 a) 8 years   b) 9 years   c)10 years   d) 11 years

60. Ten years ago, the sum of ages of a father and his son was 34 years. If the ratio of present ages of the father and son is 7:2, find the present age of the son.

 a) 12 years   b)11 years   c) 10 years   d) 8 years

61. The sum of the ages of father and his son is 44 years. If 6 years after the father will be 3 times as old as his son, what are their present ages?

 a) 36, 8   b) 38, 6   c) 35, 9   d) 37, 7

62. If January 1, 1996, was Monday, what day of the week was January 1, 1997?

 a) Thursday   b) Wednesday   c) Friday   d) Sunday

63. The first republic day of India was celebrated on January 26, 1950. What day of the week was it?

 a) Wednesday   b) Friday   c) Thursday   d) Tuesday

64. On February 5, 1998, it was Thursday. The day of the week on February 5, 1997, was

 a) Wednesday   b) Monday   c) Friday   d) Sunday

65. Today is Wednesday, after 68 days, it will be

   a) Friday   b) Sunday   c) Monday   d) Thursday

66. What was the day of the week on June 17, 1991?

   a) Tuesday   b) Wednesday   c) Friday   d) Monday

67. What is the HCF of 1095 and 1168?

   a) 37   b) 73   c) 43   d) 83

68. Find the HCF of 210, 385, and 735.

   a) 7   b) 14   c) 21   d) 35

69. What will be the HCF of 608, 544; 638, 783; and 425, 476 respectively?

   a) 32, 29, 17 b) 17, 32, 29   c) 29, 32, 17   d) 32, 17, 29

70. Find the greatest integer that divides 358, 376, and 334 and leaves the
   same remainder in each case.

   a) 6   b) 7   c) 8   d) 9

71. Find the greatest number that will divide 43, 91 and 183 so as to leave the

   same remainder in each case.

   a) 4   b) 7   c) 9   d) 13

72. The H.C.F. of two numbers is 23 and the other two factors of their

   L.C.M. are 13 and 14. The larger of the two numbers is:

   a) 276   b) 299   c) 322   d) 345

73. Six bells commence tolling together and toll at intervals of 2, 4, 6, 8 10 and

   12 seconds respectively. In 30 minutes, how many times do they toll together?

   a) 4   b) 10   c) 15   d) 16

74. The greatest number of four digits which is divisible by 15, 25, 40 and 75 is:

   a) 9000   b) 9400   c) 9600   d) 9800

75. The product of two numbers is 4107. If the H.C.F. of these numbers is 37,

   then the greater number is:

   a) 101   b) 107   c) 111   d) 185

🕊 🕊 🕊 🕊 🕊

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
Affiliated to Madurai Kamaraj University
CERTIFICATE COURSE EXAMINATIONS, November 2021
ANIMATION AND COMPUTER GRAPHICS

Time: **2** Hours   Maximum Marks: **50**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. What is the shortcut key to run test movie in Flash?
2. What is the default stage size in Flash?
3. What is the use of Transform tool?
4. What type of animation does Flash support?
5. Which tool is used to pick color from the Tool panel?
6. Which command is used to reverse the last command applied in flash?
7. Which option in the menu bar allows user to hide and unhide panel windows?
8. What is the abbreviation of "fps"?
9. How to save an object in the library panel for future use?
10. Which tool is used to scale, rotate and skew objects in the stage window in flash?

SECTION – B

Answer ALL Questions   **(4 × 5 = 20)**

11. a) What are the ways to make an animation in flash look smoother?

[OR]

b) List the types of panels available in flash?

12. a) Give the uses of key frames and blank frames?

[OR]

b) Write a note on the options available in command menu?

13. a) Give the uses Free Transform tool and Lasoo tool?

[OR]

b) Distinguish between Eye dropper tool and Pen tool?

14. a) Describe the steps involved in creating a Text animation using flash?

[OR]

b) Write a note on steps involved in drawing an object in flash?

SECTION – C

Answer any TWO Questions   **(2 × 10 = 20)**

15. Explain the characteristics of flash workspace with neat diagram?
16. Enumerate on the tools available in flash and their functions?
17. Explain in detail with a neat diagram the steps involved in implementing types of tweening in flash?

ಬಿ ಬಿ ಬಿ ಬಿ ಬಿ

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

College with Potential for Excellence

Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
Affiliated to Madurai Kamaraj University

CERTIFICATE COURSE EXAMINATIONS, November 2021

PROGRAMMING IN C

Time: **2** Hours   Maximum Marks: **50**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. Who is the founder of C?

2. if a=6 then a+=5 is _____

3. In C language, the variables NAME, name, and Name are all the same. TRUE or FALSE?

4. How many main () function we can use in C language?

5. Expand CONIO

6. What is the difference between the = symbol and == symbol?

7. What is the modulus operator?

8. Define int

9. Which function help to write the information?

10. What is || operator and how does it function in a program?

SECTION – B

Answer ALL Questions   **(4 × 5 = 20)**

11. a) Explain any four operators in C

[OR]

   b) Explain Basic Structure of C programming

12. a) Explain about for loop statement in C with example

[OR]

   b) Discuss about how to create a variable and its rules with example

13. a) Write a C program using arithmetic operators

[OR]

   b) Explain about scanf statement

14. a) Write a short notes on simple IF Else statement

[OR]

   b) Define Keywords and constants

SECTION – C

Answer any TWO Questions   **(2 × 10 = 20)**

15. Discuss about basic data types in C

16. Write about conditional operator with example

17. Explain about while loop in C with Example

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
Affiliated to Madurai Kamaraj University
CERTIFICATE COURSE EXAMINATIONS, November 2021
DTP

Time: **2** Hours   Maximum Marks: **50**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. RGB Expand for_____
2. Uses of Internet.
3. PPI Stands for_____
4. Passport size photo size in centimeters_____
5. JPEG Stands for_____
6. CMYK full form_____
7. PDF Stands for_____
8. CCW Expend for_____
9. What is the shortcut key for Duplicate layer?
10. Color swatches are_____

SECTION – B

Answer ALL Questions   **(4 × 5 = 20)**

11. a) How to create a document in Photoshop?

[OR]

   b) Explain about the uses of Photoshop.

12. a) Discuss about the PSD, TIFF file format in Photoshop

[OR]

   b) How to making color adjustment in Photoshop

13. a) Explain about Background Eraser Tool

[OR]

   b) Explain about Marquee Tool

14. a) How to create visiting card in Photoshop

[OR]

   b) Discuss about the Resizing.

SECTION – C

Answer any TWO Questions   **(2 × 10 = 20)**

15. Briefly explain about Toolbox and List out one by one?
16. Explain steps to create calendar in Photoshop.
17. Give a brief explains about the layers in Photoshop?

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
Affiliated to Madurai Kamaraj University
CERTIFICATE COURSE EXAMINATIONS, November 2021
HTML AND INTERNET PROGRAMMING

Time: **2** Hours   Maximum Marks: **50**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. Define Webpage
2. What is the extension of a HTML file?
3. Expand WWW
4. Define Internet
5. Name any 3 Browser.
6. Find the odd one from the following: Bold, italic, underline, print
7. Write the types of alignment
8. Write any 5 tag in HTML
9. Expand SGML.
10. Expand CSS.

SECTION – B

Answer ALL Questions   **(4 × 5 = 20)**

11. a) Explain about the Internet and its Service.

[OR]

   b) Explain about Brower and Servers

12. a) Write about the Structure of HTML program and explain it.

[OR]

   b) Briefly discuss about the Table creation in HTML

13. a) Explain about unordered list with example.

[OR]

   b) Write a HTML program to illustrate text font tag.

14. a) Explain about the Marquee and Break Tag

[OR]

   b) Explain about the Text Formatting Tag

SECTION – C

Answer any TWO Questions   **(2 × 10 = 20)**

15. Explain about the 10 basic tag in HTML.
16. Write about the ordered list with example
17. Briefly discuss about the LINKS

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Allied Course: First Semester: Paper – I
DISCRETE MATHEMATICS
Under CBCS and LOCF – Credit 5

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. If R is reflexive, symmetric and transitive then the relation is said to be

    _____.

    a) Binary relation   b) Compatibility relation

    c) Equivalence relation   d) Partial order relation

2. A = {1, 3, 5, 7, 9} is a _____.

    a) null set   b) finite set   c) singleton set   d) infinite set

3. If $\begin{bmatrix} 3x+7 & 5 \\ y+1 & 2-3x \end{bmatrix} = \begin{bmatrix} 1 & y-2 \\ 8 & 8 \end{bmatrix}$ then the values of x and y respectively

    are_____

    a) -2 , 7   b) -1/3 , 7   c) 1/3 , -2/3   d) 2 , -7

4. A is of order m X n and B is order p X q, addition of A and B is possible

    only if

    a) m=p   b) n=q   c) n=p   d) m=p , n=q

5. Let P: I am in Bangalore. , Q: I love cricket. ; then q -> p(q implies p) is:

    a) If I love cricket then I am in Bangalore

    b) If I am in Bangalore then I love cricket

    c) I am not in Bangalore   d) I love cricket.

6. PCNF is also called _____.

  a) sum of product canonical form.   b) product of sum canonical form

  c) sum canonical form   d) product canonical form

7. _____is the process of inferring the truth form a general statement

  for particular cases.

  a) Mathematical Induction   b) Recursive

  c) Recurrence   d) Function

8. The hypothesis in the inductive step that the statement holds for some n

  is called the_____

  a) Induction hypothesis   b) Inductive hypothesis

  c) A&B   d) None

9. An edge with same ends is called _____.

  a) complete graph   b) bipartite graph

  c) loops   d) link

10. A directed graph $G = (V, E)$ is said to be finite if it's _____.

  a) set V of vertices is finite

  b) set V of vertices & set E of edges are finite

  c) set E of edges are finite   d) no vertices & edges are repeated

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What do you mean Venn diagram?

12. Write down representation of a set in a computer.

13. Define matrix.

14. List out the types of matrix.

15. What do you mean conjunction (AND)?

16. Prove that the sum of the first n integer is n(n+1)/2 for all n.

17. What is graph theory?

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Let A=B=X= {1,2,3,4,5,6}. Define R as < on x.

        [OR]

  b) Let A= {1,2,3,4}, B= {1,4,9,16} and the relation

  R= {(1,1),(2,4),(3,9),(4,16)}. Draw the relation graph.

19. a) Outline properties of determinant of matrix.

        [OR]

  b) Summarize properties of inverse of a matrix.

20. a) Let p be "Ravi is tall" and let q be "Ravi is handsome". Write each of

  the following statements in symbolic form.

  a) Ravi is short or not handsome. b) Ravi is tall or handsome.

  c) It is not true that Ravi is short or not handsome.

        [OR]

  b) Construct the truth table for the statement formula ~ p ^ q.

21. a) Show that $1^3+2^3+3^3+\ldots+n^3=n^2(n+1)^2/4$; n€N.

        [OR]

  b) Prove that for n≥1, $1+2+4+\ldots+2^n=2^{n+1}-1$.

22. a) Outline Euler circuits.

        [OR]

  b) Summarize Hamiltonian graph.

SECTION – D

23. Develop N-ary relations and their applications.

24. Utilize properties of matrix multiplication.

25. Show the following:

 a) $\sim(p \uparrow q) \Leftrightarrow \sim p \downarrow \sim q$ b) $\sim(p \downarrow q) \Leftrightarrow \sim p \uparrow \sim q$

26. Find a recursive definition of binomial coefficient.

27. Summarize operations on graph.

ॐ ॐ ॐ ॐ ॐ

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3ʳᵈ Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Allied Course: Third Semester: Paper – I
OPERATIONS RESEARCH
Under CBCS and LOCF – Credit 5

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. _____ prescribes a course of action of the problem

 a) Simulation model   b) Analogue Model

 c) Prescriptive Model   d) none

2. Feasible solution satisfies _____
 a) Only constraints   b) only non-negative restriction
 c) [a] and [b] both   d) [a],[b] and Optimum solution

3. The best use of Linear Programming to find optimal of
 a) Money   b) manpower   c) Machine   d) All the above

4. The canonical form of LPP if the objective function is of minimization, then all the constraints other than non-negativity conditions are _____
 a) greater than type.   b) lesser than type.
 c) greater than or equal to type.   d) lesser than or equal to type.

5. A variable which does not appear in the basis variable (B) column of simplex table is
 a) never equal to zero   b) always equal to zero
 c) called basic variable   d) None of these

6. In simplex method basic solution set as (n-m), all variables other than

 basic are classified as

 a) constant variable   b) non positive variables

 c) basic variables   d) non-basic variable

7. A transportation problem which aims at maximization of profit can be solved as a maximization problem itself. However, while finding the initial basic feasible solution,

   a) allocations are to be made in highest profit cells

   b) allocations are to be made in lowest profit cells

   c) allocations are to be made in any profit cells

   d) allocations are to be made in negative profit cells

8. North – West corner refers to _____.

   a) top left corner   b) top right corner

   c) both of them   d) none of them

9. The application of assignment problems is to obtain _____.

   a) only minimum cost.   b) only maximum profit.

   c) minimum cost or maximum profit.   d) Optimal Assignment

10. The dummy source or destination in a transportation problem is added to

   a) to make balanced one

   b) prevent solution from becoming degenerate

   c) ensure that total cost does not exceed a limit

   d) all of the above

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. What do you mean OR?

12. Write down Iconic models.

13. Define LPP.

14. Define slack variable.

15. What is entering variable?

16. Define assignment problem.

17. What do you mean by transportation problem?

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Explain about the nature and meaning of OR.

                            [OR]

   b) Write down the principles of modeling.

19. a) Solve the following LPP by graphical methods:

   Min. $z=5x_1-2x_2$; $2x_1+3x_2\geq1$, Subject to: $x_1,x_2\geq0$.

                            [OR]

   b) Solve the following LPP by graphical methods:

   Min. $z=5x_1+3x_2$; $3x_1+5x_2\leq15$, Subject to: $5x_1+2x_2\leq10$; $x_1,x_2\geq0$

20. a) Solve the following problem by simplex method:

   Max. $z=5x_1+3x_2$, subject to

   $3x_1+5x_2\leq15$

   $5x_1+2x_2\leq10$

   $x_1,x_2\geq0$.

                            [OR]

   b) Solve the following problem by simplex method:

   Max. $z=7x_1+5x_2$, subject to

   $-x_1-2x_2\geq-6$

   $4x_1+3x_2\leq12$

   $x_1,x_2\geq0$.

21. a) Explain assignment algorithm or Hungarian Method.

                            [OR]

   b) Write down the rule to draw minimum number of lines.

22. a) Explain about special structure of transportation problem.

[OR]

b) Discuss about loops in transportation table and their properties.

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Describe scope of operations research.

24. Consider the problem: Min. $z=1.5x_1+2.5x_2$ subject to $x_1+3x_2\geq3$,

$x_1+x_2\geq2$, $x_1,x_2\geq0$.

25. Min $z=x_1+3x_2+2x_3$, subject to

$3x_1-x_2+3x_3\leq7$,

$-2x_1+4x_2\leq12$,
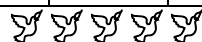
$-4x_1+3x_2+8x_3\leq10$,

and $x_1,x_2,x_3\geq0$.

26. Solve the minimal assignment problem whose effectiveness matrix given by table.

	1	2	3	4
I	2	3	4	5
II	4	5	6	7
III	7	8	9	8
IV	3	5	8	4

27. Solve Transportation Problem by using NWC.

From		To			
		A	B	C	Supply
	a	2	7	4	5
	b	3	3	1	8
	c	5	4	7	7
	d	1	6	2	14
	Demand	7	9	18	

ᘏ ᘏ ᘏ ᘏ ᘏ

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: First Semester: Paper – I
PROGRAMMING IN C
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. Which of the following is correct variable name?

   a) float   b) real   c) int   d) double

2. The declaration of variable in C can be done_____.

   a) anywhere in the program.   b) in declaration part.

   c) in executable part.   d) at the end of the program.

3. By default, the function returns_____.

   a) integer value.   b) float value.   c) char value.   d) double

4. In str1+str2 means

   a) Combines two string   b) add value

   c) both   d) none

5. The meaning of keyword void before the function name means_____.

   a) function should not return any value.

   b) function should return a value.

   c) no arguments are passed.   d) some arguments are passed

6. The bitwise AND operator is used for

   a) Masking   b) Comparison   c) Division   d) Shifting bit

7. The structure combines variables of_____.

  a) similar data types. b) dissimilar data types.

  c) unsigned data types. d) signed data types

8. The redirection operator -> transfers any output to_____.

  a) text file. b) console. c) binary file. d) number file.

9. The feof function can be used to test _____

  a) start of file condition b) detect of error of file condition

  c) end of file condition d) None

10. Command line arguments are used to accept argument from_____.

  a) command prompt of operating system.

  b) through scanf( ) statement.

  c) both (a) and (b). d) through printf() statement

SECTION – B

Answer any FIVE Questions (5 × 2 = 10)

11. Define Variable.

12. Define Array.

13. What is Function?

14. Define Structure.

15. What is Pointer?

16. Define Recursion.

17. What is the correct way to declare a pointer?

SECTION – C

Answer ALL Questions (5 × 5 = 25)

18. a) Examine nested if statement syntax with example.

[OR]

  b) Explain various Operations used in C with example.

19. a) Analyze Multi-Dimensional Arrays with example.

[OR]

  b) What are the string operations? Framerate with example.

20. a) Explain various user defined functions syntax with example.

[OR]

  b) Give a note on handling of non integer functions.

21. a) Paraphrase in brief about array of structures with example.

[OR]

  b) Write a note on bit fields with example.

22. a) Describe point and arrays syntax with example.

[OR]

  b) Elevate random access to files with example.

SECTION – D

Answer any THREE Questions (3 × 10 = 30)

23. Discuss various data types with example.

24. Write a C Program to Printf number Ascending order using Single

  Dimensional Arrays.

25. Discuss nested function with example.

26. Explain Unions syntax with example.

27. Discuss about file management in C. Give example.

🕊 🕊 🕊 🕊 🕊

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST
College with Potential for Excellence
Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Comp.Science Degree (Semester) Examinations, November 2021
Part – III: Core Course: First Semester: Paper – II
DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION
Under CBCS and LOCF – Credit 4

Time: **3** Hours   Max. Marks: **75**

SECTION – A

Answer ALL Questions   **(10 × 1 = 10)**

1. A _____ is a circuit with only one output but can have multiple

   inputs.

   a) Logic gate   b) Truth table   c) Binary circuit   d) Boolean circuit

2. Which of the following is not a hexa-decimal number?

   a) F   b) H   c) A   d) D

3. How many select lines would be required for an 8-line-to-1-line

   multiplexer?

   a) 2   b) 4   c) 8   d) 3

4. A combinational circuit is one in which the output depends on the

   _____

   a) Input combination at the time

   b) Input combination and the previous output

   c) Input combination at that time and the previous input combination

   d) Present output and the previous output

5. Based on how binary information is entered or shifted out, shift registers

   are classified into _____ categories.

   a) 2   b) 3   c) 4   d) 5

6. How can parallel data be taken out of a shift register simultaneously?

 a) Use the Q output of the first FF

 b) Use the Q output of the last FF

 c) Tie all of the Q outputs together

 d) Use the Q output of each FF

7. _____ is used to choose between incrementing the PC or

 performing ALU operations.

 a) Conditional codes   b) Multiplexer

 c) Control unit   d) None of the mentioned

8. SPEC stands for _____

 a) Standard Performance Evaluation Code

 b) System Processing Enhancing Code

 c) System Performance Evaluation Corporation

 d) Standard Processing Enhancement Corporation

9. What does the end instruction do?

 a) It ends the generation of a signal

 b) It ends the complete generation process

 c) It starts a new instruction fetch cycle and resets the counter

 d) It is used to shift the control to the processor

10. After the completion of the DMA transfer, the processor is notified by
_____

 a) Acknowledge signal

 b) Interrupt signal

 c) WMFC signal

 d) None of the mentioned

SECTION – B

Answer any FIVE Questions   **(5 × 2 = 10)**

11. Define a code.

12. What is multiplexing?

13. Find the use of shift register.

14. List the two registers that facilitate communication with the main memory.

15. What is the function of instruction register?

16. Define the use of immediate mode.

17. Find the difference between indirect mode and index mode.

SECTION – C

Answer ALL Questions   **(5 × 5 = 25)**

18. a) Illustrate the Excess-3 code from Decimal Number with an example.

[OR]

 b) Explain OR gate and AND gate with diagram and truth table.

19. a) Show the diagram of 4 to 1 multiplexer and explain.

[OR]

 b) Enumerate about 3 to 8 Decoder with logic diagram and truth table.

20. a) Illustrate the D Flip flop with diagram and truth table.

[OR]

 b) Demonstrate the T Flip flop with diagram and truth table.

21. a) Enumerate about the bus structure.

[OR]

b) Summarize the operation of computer in Input unit, Output unit and

Control unit.

22. a) Analyze about the Execution process of a complete instruction.

[OR]

b) Demonstrate the Hardwired control signals with diagram.

SECTION – D

Answer any THREE Questions   **(3 × 10 = 30)**

23. Develop the different Basic Laws of Boolean Algebra.

24. Build the Octal to Binary Encoder, Decimal to BCD Encoder with

   diagram and truth table

25. Develop the Shift Left Register and Shift Right Register with diagram

   and truth table.

26. Identify the different types of software and its utilization.

27. Build the basic organization of a microprogrammed control unit.

ॐ ॐ ॐ ॐ ॐ