R0957	Sub. Code
	2MS2C1

M.Voc. DEGREE EXAMINATION, APRIL – 2024

Second Semester

Software Development

PRINCIPLES OF COMPUTER NETWORKS AND CYBER SECURITY

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective questions by choosing the correct options.

1. Which of the following computer network is built on the top of another network? (CO1, K1)

   (a) overlay network (b) prime network

   (c) prior network (d) chief network

2. ARPANET stands for ————————. (CO1, K1)

   (a) Advanced Research Project Automatic Network

   (b) Advanced Research Programmed Auto Network

   (c) Advanced Research Project Automatic Network

   (d) Advanced Research Project Authorized Network

3. How error detection and correction is done? (CO2, K3)

(a) By passing it through equalizer

(b) By passing it through filter

(c) By amplifying it

(d) By adding redundancy bits

4. Finite state machines are used for ————————. (CO2, K1)

(a) deterministic test patterns

(b) algorithmic test patterns

(c) random test patterns

(d) pseudo random test patterns

5. Internet traffic is directed efficiently using ————————. (CO3, K2)

(a) Routing Algorithms

(b) Using Repeaters

(c) Using Additional Devices

(d) Using Cables

6. Two broad categories of congestion control are ————————. (CO3, K2)

(a) Open-loop and Closed-loop

(b) Open-control and Closed-control

(c) Active control and Passive control

(d) Active loop and Passive loop

7. ———— is a type of security mechanism used to authenticate users and devices on a network. (CO4, K4)

(a) Encryption (b) Firewall

(c) Access control (d) IDS/IPS

8. Which of the following is an objective of network security? (CO4, K4)

(a) Confidentiality (b) Integrity

(c) Availability (d) All of the above

9. In asymmetric key cryptography, the private key is kept by (CO5, K2)

(a) sender

(b) receiver

(c) sender and receiver

(d) all the connected devices to the network

10. Message authentication code is also known as (CO5, K2)

(a) key code

(b) hash code

(c) keyed hash function

(d) message key hash function

Part B (5 × 5 = 25)

Answer **all** the questions not more than 500 words each.

11. (a) Describe the usage of networks in detail. (CO1, K1)

Or

(b) Write short notes on ARPANET. (CO1, K1)

12. (a) What are the four methods used in framing? Explain. (CO2, K3)

Or

(b) Explain about simplex stop and wait protocol for a noisy channel in detail. (CO2, K3)

13. (a) Write about approaches of congestion control. (CO3, K2)

Or

(b) Compare multicast and broadcast routing. (CO3, K2)

14. (a) Write in detail about image processing attacks. (CO4, K4)

Or

(b) Write short notes on vulnerabilities. (CO4, K4)

15. (a) Discuss about requirements of symmetric encryption. (CO5, K2)

Or

(b) Write the overview of simple hash functions. (CO5, K2)

Part C $(5 \times 8 = 40)$

Answer **all** the questions not more than 1000 words each.

16. (a) Illustrate architecture of network with neat sketch. (CO1, K1)

Or

(b) Write a detailed note on physical layer transmission media. (CO1, K1)

17. (a) Explain in detail about types of Error-correcting codes. (CO2, K1)

Or

(b) Discuss about slide window protocols in detail. (CO2, K1)

18. (a) Describe any two design issues in detail. (CO3, K2)

Or

(b) Explain about packet fragmentation in detail. (CO3, K2)

19. (a) Write about attacks, services and mechanisms in network security. (CO4, K4)

Or

(b) Discuss the types of threads in detail. (CO4, K4)

20. (a) Explain any two substitution techniques in detail. (CO5, K2)

Or

(b) Discuss about security of Hash function and MACs. (CO5, K2)

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R0958	Sub. Code
	2MS2C2

M.Voc. DEGREE EXAMINATION, APRIL – 2024

Second Semester

Software Development

FUNDAMENTALS OF OPERATING SYSTEM

(CBCS – 2022 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 1 = 10)

Answer **all** the following objective type questions by choosing the correct option.

1. Which one of the following is not a real time operating system? (CO1, K1)

   (a) RTLinux (b) Palm OS

   (c) QNX (d) VxWorks

2. Which of the following is not the type of System Call? (CO1, K1)

   (a) Process control

   (b) File management

   (c) Device management

   (d) Registers

3. CPU scheduling is the basis of ————————. (CO2, K2)

(a) Multiprogramming operating systems

(b) Larger memory sized systems

(c) Multiprocessor systems

(d) None of the mentioned

4. A thread is sometimes called as ————————. (CO2, K2)

(a) A light weight process

(b) Heavy weight process

(c) Both (a) and (b)

(d) None of these

5. The ———————— in operating systems is an issue that arises when shared resources are accessed by concurrent processes. (CO3, K3)

(a) Critical section problem

(b) Entry Section Problem

(c) Both (a) and (b)

(d) None of these

6. ———————— are integer variables that are used to control access to shared resources in operating systems.(CO3, K3)

(a) Semaphores (b) Deadlock

(c) Synchronization (d) Scheduling

7. RAG stands for ————————. (CO4, K4)

(a) Resource Allocation Graph

(b) Resource Allocate Graph

(c) Research Allocation Graph

(d) Research Allocate Graph

8. Circular Wait forms ———————— chain. (CO4, K4)

(a) Circular (b) Linear

(c) Both (a) and (b) (d) None of these

9. ———————— is a process of swapping a process temporarily to a secondary memory from the main memory. (CO5, K5)

(a) Swapping

(b) Paging

(c) Memory allocation

(d) None of these

10. ———————— is a computing phenomenon that occurs when virtual memory is used. (CO5, K5)

(a) Thrashing (b) Paging

(c) Demand paging (d) Swapping

Part B $(5 \times 5 = 25)$

Answer **all** the questions not more than 500 words each.

11. (a) Write a note on Batch System. (CO1, K1)

Or

(b) Differentiate Real time system and Distributed system. (CO1, K1)

12. (a) What are the advantages of Inter Process Communication? (CO2, K2)

Or

(b) Illustrate Process Control Block with neat Sketch. (CO2, K2)

13. (a) Write a note on Critical Section Problem. (CO3, K3)

Or

(b) Compare multiple processor, Realtime, thread Scheduling. (CO3, K3)

14. (a) What are the four necessary conditions for deadlock? (CO4, K4)

Or

(b) Discuss Various Techniques to recover from deadlock. (CO4, K4)

15. (a) Compare Document Based Middleware and File Systems Based Middleware. (CO5, K5)

Or

(b) Write a note on Demand Paging. (CO5, K5)

Part C ($5 \times 8 = 40$)

Answer **all** the questions not more than 1000 words each.

16. (a) Explain the working procedure of System Calls and it's types. (CO1, K2)

Or

(b) Discuss about OS Services in detail. (CO1, K2)

17. (a) Describe the various Concept of Scheduling Algorithms. (CO2, K2)

Or

(b) Explain the types of Thread with neat sketch. (CO2, K2)

18. (a) Illustrate about Semaphores in detail. (CO3, K3)

Or

(b) What are two stack solutions in critical section problem? Explain. (CO3, K3)

19. (a) How to avoid deadlock using Bankers Algorithm? Explain. (CO4, K4)

Or

(b) Write the steps for preventing Deadlock. (CO4, K4)

20. (a) Describe about continuous Memory Allocation with example. (CO5, K5)

Or

(b) Illustrate about various types of Middleware in detail. (CO5, K5)

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