राष्ट्रीय प्रौद्योगिकी संस्थान वरंगल
वरंगल – 506004, तेलंगाना, भारत
NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL
WARANGAL – 506004, Telangana, INDIA

QUESTION BOOKLET – ADVANCED TEST FOR RECRUITMENT TO TECHNICAL CADRE POSTS

Post:	Technical Assistant
Department	CDIS
Advt.:	01/2026 dated 09.01.2026
Date of Exam:	06-08-2026
Duration:	2 Hours
Total Marks:	200 (100 Q X 2 M each)
No. of Questions:	100 (MCQs)
Negative Marking:	1/4th mark for every wrong answer

INSTRUCTIONS TO THE CANDIDATES

1. This is an Advanced Test comprising 100 Multiple Choice Questions (MCQs), to be conducted in MCQ mode only.
2. The duration of the test is 2 hours.
3. Answers must be marked on the OMR Answer Sheet using a blue or black ballpoint pen only. Use of pencils is not permitted.
4. Candidates must write/mark their Roll Number, Post applied for, and other required details in the designated space on the OMR Answer Sheet.
5. Answers marked on the Question Booklet or on any sheet other than the OMR Answer Sheet will not be evaluated.
6. For each question, darken the circle corresponding to the correct answer completely and clearly on the OMR Answer Sheet.
7. Each question carries equal marks. There will be a negative marking of ¼ th mark for every wrong answer. No marks will be deducted for questions not attempted.
8. Mark only one answer for each question. Marking more than one circle for a question will be treated as a wrong answer.
9. Overwriting, cutting, or erasing that leaves the OMR Answer Sheet unclear may result in the answer not being evaluated.
10. No candidate shall leave the examination hall during the test.
11. Any attempt to copy, use unfair means, or communicate with others will result in immediate disqualification.
12. The use of electronic gadgets, calculators, mobile phones, smart watches, or any written/printed material is strictly prohibited.
13. Rough work, if any, should be done only on the separate sheet provided for the purpose.
14. Ensure that the OMR Answer Sheet is duly filled and handed over to the Invigilator before leaving the examination hall.
15. Failure to submit the OMR Answer Sheet will result in cancellation of candidature.
16. All material provided, including rough sheets, must be returned before leaving the examination hall.

Q1. What is the output of the following C program?

```
int x = 5;
int *p = &x;
*p = *p + 3;
printf("%d", x);
```

(A) 5
(B) 8
(C) 3
(D) Compilation error

Q2. On a machine where int occupies 4 bytes and pointers occupy 8 bytes, what is the value of sizeof(int*)?

(A) 4
(B) 8
(C) 2
(D) Depends on the value stored in the int

Q3. What is the output of the following C program?

```
#include <stdio.h>
void modify(int x) {
   x = x + 5;
}
int main() {
   int x = 10;
   modify(x);
   printf("%d", x);
   return 0;
}
```

(A) 10
(B) 15
(C) 5
(D) Compilation error

Q4. What is the output of the following C program?

```
int x = 3, y = 4;
int *p = &x;
*p += y;
printf("%d", x);
```

(A) 3
(B) 4
(C) 7
(D) Compilation error

Q5. What is the output of the following C program?

```
int x = 5;
int *p = &x;
(*p)++;
printf("%d", x);
```

(A) 5
(B) 6
(C) 4
(D) Compilation error

Q6. What is the output of the following C program?

```
int x = 8;
int *p = &x;
int *q = p;
*q = *q + 2;
printf("%d %d", x, *p);
```

(A) 8 8
(B) 10 10
(C) 8 10
(D) 10 8

Q7. What is the output of the following C program?

```
int a[5] = {1, 2, 3, 4, 5};
int *p = a;
printf("%d", *(p + 2) + *(a + 3));
```

(A) 7
(B) 3
(C) 8
(D) 5

Q8. What is the output of the following C program?

```
int a[3][2] = {{1, 2}, {3, 4}, {5, 6}};
printf("%d", *(*(a + 2) + 1));
```

(A) 5
(B) 6
(C) 4
(D) 2

Q9. In C++, memory required for an object or variable can be allocated dynamically at runtime using a specific operator. Which of the following operators is used for dynamic memory allocation in C++?

(A) malloc
(B) alloc
(C) new
(D) create

Q10. Consider the following C++ program:

```
#include <iostream>
using namespace std;

class Base {
public:
   virtual void show() { cout << "Base "; }
   virtual ~Base() {}
};
class Derived : public Base {
public:
   void show() { cout << "Derived "; }
};
int main() {
   Base *b = new Derived();
   b->show();
   delete b;
   return 0;
}
```

What will be the output of the above program?

(A) Base
(B) Derived
(C) Compilation error
(D) Runtime error

Q11. In a class, if the constructor is declared as private, which one of the following statements is TRUE?

(A) The class cannot be inherited by any other class.
(B) Objects of the class cannot be created from outside the class.
(C) The declaration of the class results in a compile-time error.
(D) All data members and member functions of the class automatically become private.

Q12. In Java, which keyword is used to create a subclass that inherits properties and methods from a superclass?

(A) implements
(B) extends
(C) inherits
(D) super

Q13. Consider the following Java program. What is the output produced by the program?

```
public class Test {
   public static void main(String[] args) {
      String s1 = new String("GATE");
      String s2 = new String("GATE");
      System.out.print((s1 == s2) + " " + s1.equals(s2));
   }
}
```

(A) true true
(B) false false
(C) false true
(D) true false

Q14. What is the output of the following Python statement?

```
print(2 ** 3 ** 2)
```

(A) 64
(B) 512
(C) 36
(D) 12

Q15. In Python, which keyword is used to define a function?

(A) function
(B) def
(C) func
(D) define

Q16. Consider the following Python code. What will be the output when the program is executed?

```
def func(val, lst=[]):
   lst.append(val)
   return lst
print(func(1))
print(func(2))
```

(A) [1] followed by [2]
(B) [1] followed by [1, 2]
(C) [1, 2] followed by [1, 2]
(D) [1] followed by [2, 1]

Q17. What is the worst-case time complexity of finding the maximum element in an unsorted array containing n elements?

(A) O(1)
(B) O(log n)
(C) O(n)
(D) O(n log n)

Q18. Which traversal of a Binary Search Tree (BST) visits the nodes in ascending order of their key values?

(A) Preorder
(B) Postorder
(C) Inorder
(D) Level order

Q19. What is the worst-case time complexity of finding the middle node of a singly linked list containing n nodes using the slow and fast pointer technique?

(A) O(1)
(B) O(log n)
(C) O(n)
(D) O(n^2)

Q20. Which one of the following is the correct postfix expression corresponding to the infix expression A + B * C?

(A) AB+C*
(B) ABC*+
(C) A+BC*
(D) ABC+*

Q21. A Binary Search Tree (BST) is constructed by inserting the keys 50, 30, 70, 20, 40 in the given order. What is the height of the resulting BST, assuming the root node is at height 0?

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

Q22. A complete binary tree contains n nodes, where n is odd. What is the maximum number of leaf nodes possible in the tree?

(A) (n-1)/2
(B) (n+1)/2
(C) n/2
(D) log2(n)

Q23. Consider a singly linked list containing the elements 1 → 2 → 3 → NULL. What will be the output of the following C code?

```
int sum=0;
struct Node *p=head;
while(p!=NULL){ sum+=p->data; p=p->next; }
printf("%d", sum);
```

(A) 3
(B) 6
(C) 5
(D) 0

Q24. What is the worst-case time complexity of inserting a new node into a Red-Black Tree containing n nodes?

(A) O(1)
(B) O(log n)
(C) O(n)
(D) O(n log n)

Q25. A Binary Search Tree (BST) is constructed by inserting the keys 50, 30, 70, 20, 40 in the given order. What is the postorder traversal of the resulting BST?

(A) 20 40 30 70 50
(B) 50 30 20 70 40
(C) 20 30 40 50 70
(D) 30 20 40 70 50

Q26. Which one of the following shortest-path algorithms does not guarantee correct results in the presence of negative edge weights?

(A) Bellman-Ford
(B) Floyd-Warshall
(C) Dijkstra's algorithm
(D) All of the above handle negative weights correctly

Q27. A spanning tree of a connected undirected graph contains V vertices. How many edges does the spanning tree have?

(A) V
(B) V - 1
(C) V + 1
(D) E - 1

Q28. What is the best-case time complexity of Insertion Sort when the input array is already sorted?

(A) O(1)
(B) O(n)
(C) O(n log n)
(D) $O(n^2)$

Q29. What is the time complexity of Breadth-First Search (BFS) traversal of a graph with V vertices and E edges when the graph is represented using an adjacency list?

(A) O(V)
(B) O(E)
(C) O(V + E)
(D) O(V * E)

Q30. Which one of the following optimization problems is typically solved using Dynamic Programming because it exhibits overlapping subproblems and optimal substructure, whereas a simple greedy approach does not always produce an optimal solution?

(A) Activity selection problem
(B) Fractional knapsack
(C) 0/1 Knapsack problem
(D) Minimum spanning tree (Prim's)

Q31. What is the time complexity of the standard Dynamic Programming algorithm for computing the Longest Common Subsequence (LCS) of two strings of lengths m and n?

(A) O(m+n)
(B) O(m*n)
(C) O(min(m,n))
(D) O(m*n*(m+n))

Q32. Consider the array [5, 1, 4, 2, 8]. What will be the array after one complete pass of Bubble Sort (in ascending order)?

(A) [1, 4, 2, 5, 8]
(B) [1, 5, 4, 2, 8]
(C) [5, 1, 4, 2, 8]
(D) [1, 2, 4, 5, 8]

Q33. Which one of the following algorithms is generally preferred for finding the Minimum Spanning Tree (MST) of a dense weighted graph, where the number of edges is close to V^2?

(A) Kruskal's algorithm using edge sorting
(B) Prim's algorithm using an adjacency matrix ($O(V^2)$)
(C) BFS
(D) Topological sort

Q34. Which one of the following addressing modes specifies the operand as part of the instruction itself?

(A) Direct Addressing
(B) Immediate Addressing
(C) Register Indirect Addressing
(D) Implied Addressing

Q35. What is the primary purpose of Cache memory in a computer system?

(A) To increase the permanent storage capacity of the computer
(B) To bridge the speed gap between the CPU and main memory (RAM)
(C) To replace physical memory entirely
(D) To handle secondary I/O operations directly

Q36. In the memory hierarchy of a computer system, which of the following storage units provides the fastest access time?

(A) Main Memory (RAM)
(B) CPU Registers
(C) Level 1 Cache
(D) Solid State Drive (SSD)

Q37. A 32-bit processor has a byte-addressable main memory of size 4 GB. It uses a direct-mapped cache of size 64 KB with a block size of 16 bytes. How many bits are required for the tag field in the memory address?

(A) 12
(B) 16
(C) 14
(D) 20

Q38. A non-pipelined processor executes one instruction in 10 ns. The processor is redesigned into a 5-stage pipeline with stage delays of 2 ns, 3 ns, 2.5 ns, 1.5 ns, and 1 ns. If each pipeline register introduces an overhead of 0.5 ns, what is the speedup achieved for a very large number of instructions?

(A) 2.86
(B) 3.33
(C) 4.00
(D) 2.00

Q39. In a vector interrupt mechanism, how does the processor determine the starting address of the Interrupt Service Routine (ISR)?

(A) By polling every device in sequential order until the interrupting device responds
(B) The interrupting device supplies an interrupt vector number that maps to a fixed vector table address
(C) The CPU fetches the ISR address directly from the Program Counter
(D) The DMA controller forces a system reboot to the ISR entry point

Q40. Which bus arbitration scheme uses a single request line and a grant signal that is passed sequentially from one device to another until the requesting device is identified?

(A) Centralized Parallel Arbitration
(B) Daisy Chaining
(C) Distributed Arbitration by Self-Selection
(D) Round-Robin Polling

Q41. A 4-way set-associative cache has a total capacity of 128 KB and a cache line size of 64 bytes. The main memory is byte-addressable with a 32-bit physical address space. What is the size of the tag directory (excluding valid and dirty bits)?

(A) 9,216 bits
(B) 38,912 bits
(C) 34,816 bits
(D) 18,432 bits

Q42. Consider the following two instructions executed on a standard 5-stage RISC pipeline (IF, ID, EX, MEM, WB) without operand forwarding:

1. ADD R1, R2, R3 (R1 <- R2 + R3)
2. SUB R4, R1, R5 (R4 <- R1 - R5)

How many stall cycles are required due to the data hazard between the two instructions?

(A) 1 stall cycle
(B) 2 stall cycles
(C) 3 stall cycles
(D) 0 stall cycles

Q43. What is the minimum number of 2-input NAND gates required to implement a 2-input XOR gate?

(A) 3
(B) 4
(C) 5
(D) 6

Q44. What is the 2's complement representation of the decimal number -5 in a 4-bit binary system?

(A) 1010
(B) 1011
(C) 1100
(D) 0101

Q45. Which of the following flip-flops suffers from the race-around condition when both inputs are HIGH in a level-triggered configuration?

(A) D Flip-Flop
(B) T Flip-Flop
(C) SR Flip-Flop
(D) JK Flip-Flop

Q46. Simplify the Boolean function $F(A, B, C, D) = \Sigma m(0, 1, 2, 3, 8, 9, 10, 11)$.

(A) $A' + B'$
(B) B'
(C) $A' \cdot B'$
(D) C'

Q47. What is the minimum number of 2-to-1 multiplexers required to construct an 8-to-1 multiplexer?

(A) 6
(B) 7
(C) 8
(D) 4

Q48. What is the Hexadecimal equivalent of the octal number $(756)_8$?

(A) $(1EE)_{16}$
(B) $(1DE)_{16}$
(C) $(1CE)_{16}$
(D) $(1DE)_{16}$

Q49. Which one of the following state transitions is NOT possible in the standard five-state process model of an operating system?

(A) Ready → Running
(B) Running → Waiting (Blocked)
(C) Waiting (Blocked) → Running
(D) Running → Ready

Q50. Thrashing in an operating system occurs when:

(A) The CPU executes infinite loops in user mode
(B) The system spends more time paging in and out than executing processes
(C) Multiple processes deadlock simultaneously on I/O devices
(D) Secondary storage experiences physical read/write errors

Q51. Belady's anomaly refers to the phenomenon in which:

(A) Increasing the number of page frames always reduces page faults
(B) Increasing the number of page frames may increase the number of page faults for certain page replacement algorithms such as FIFO
(C) LRU always produces more page faults than FIFO
(D) The Optimal page replacement algorithm requires infinite memory

Q52. Three processes P_1, P_2, and P_3arrive at time 0 with CPU burst times of 10 ms, 5 ms, and 8 ms, respectively. Assuming non-preemptive Shortest Job First (SJF) scheduling, what is the average waiting time?

(A) 6.0 ms
(B) 7.67 ms
(C) 5.0 ms
(D) 8.33 ms

Q53. A system uses a 32-bit virtual address space with a page size of 4 KB. Assuming a single-level page table and byte-addressable memory, how many entries are required in the page table?

(A) 2^{12}
(B) 2^{20}
(C) 2^{32}
(D) 2^{16}

Q54. What is the primary purpose of the Translation Lookaside Buffer (TLB) in virtual memory management?

(A) To hold dirty pages before flushing to disk
(B) To cache recent virtual-to-physical address translations to speed up memory access
(C) To prevent unauthorized access between kernel and user mode
(D) To balance page allocations dynamically between processes

Q55. Consider the following code executed on a UNIX system:

```
fork();
fork();
fork();
```

How many processes (including the original process) exist after execution?

(A) 3
(B) 7
(C) 8
(D) 16

Q56. A two-level paging scheme is used on a 32-bit machine with a page size of 4 KB. The outer page table contains 1024 entries, and each page table entry occupies 4 bytes. What is the size of the outer page table?

(A) 4 KB
(B) 4 MB
(C) 1 KB
(D) 16 KB

Q57. Consider a disk with 200 tracks, numbered from 0 to 199. The disk request queue is:
98, 183, 37, 122, 14, 124, 65, 67
The disk head is initially positioned at track 53 and is moving towards higher-numbered tracks. Assuming the SCAN (Elevator) disk scheduling algorithm, where the head continues to the last track (199) before reversing its direction, what is the total head movement (in tracks) required to service all the requests?

(A) 236 tracks
(B) 331 tracks
(C) 208 tracks
(D) 146 tracks

Q58. Two processes $P_1$and P_2share a binary semaphore S. If the wait() and signal() operations are not implemented atomically, which of the following problems may occur?

(A) Priority Inversion only
(B) Race Condition leading to violation of Mutual Exclusion
(C) Guaranteed Deadlock
(D) Memory Leakage

Q59. Which of the following database language is used to define the schema structure of a database (e.g., CREATE, ALTER, DROP)?

(A) DML (Data Manipulation Language)
(B) DDL (Data Definition Language)
(C) DCL (Data Control Language)
(D) TCL (Transaction Control Language)

Q60. Which relational algebra operator is used to select tuples (rows) that satisfy a given predicate/condition?

(A) Projection (π)
(B) Selection (σ)
(C) Cartesian Product ($\times$)
(D) Join ($\bowtie$)

Q61. Which normal form eliminates partial functional dependencies?

(A) 1NF
(B) 2NF
(C) 3NF
(D) BCNF

Q62. In SQL, which clause is used to filter groups formed by the GROUP BY clause?

(A) WHERE
(B) HAVING
(C) ORDER BY
(D) LIKE

Q63. Consider the relation $R(A, B, C, D)$ with functional dependencies $\{A \rightarrow B, B \rightarrow C, C \rightarrow D\}$, which one of the following is a candidate key of R?

(A) A
(B) AB
(C) C
(D) D

Q64. Consider the SQL query:

SQL
SELECT Dept, COUNT(*)
FROM Employee
WHERE Salary > 50000
GROUP BY Dept
HAVING COUNT(*) > 5;

What is the correct logical order of execution of the clauses?

(A) FROM → WHERE → GROUP BY → HAVING → SELECT
(B) SELECT → FROM → WHERE → GROUP BY → HAVING
(C) FROM → GROUP BY → WHERE → HAVING → SELECT
(D) WHERE → FROM → GROUP BY → HAVING → SELECT

Q65. Consider the schedule: $S: R_1(X), W_1(X), R_2(X), W_2(X), C_2, C_1$ (where C_i denotes commit). The schedule is -

(A) Recoverable and Cascadeless
(B) Recoverable but NOT Cascadeless
(C) Non-recoverable
(D) Strict schedule

Q66. A disk block has a size of 1024 bytes. Each search-key value occupies 10 bytes and each block pointer occupies 6 bytes. What is the maximum order $m$of a B-tree, where the order denotes the maximum number of child pointers in a node?

(A) 64
(B) 65
(C) 63
(D) 102

Q67. Which of the following protocols is used to map an IPv4 address to a MAC address on a local area network?

(A) Reverse Address Resolution Protocol (RARP)
(B) Address Resolution Protocol (ARP)
(C) Dynamic Host Configuration Protocol (DHCP)
(D) Internet Control Message Protocol (ICMP)

Q68. Which transport layer protocol is connectionless and does not guarantee reliable delivery or in order packet delivery?

(A) TCP
(B) UDP
(C) SCTP
(D) FTP

Q69. What is the length of an IPv6 address?

(A) 32 bits
(B) 64 bits
(C) 128 bits
(D) 256 bits

Q70. In the Go-Back-N ARQ protocol, if the sender window size is N, what is the receiver window size?

(A) N
(B) $N - 1$
(C) 1
(D) 2^N

Q71. An IP address is given as 192.168.1.10/26. How many usable host addresses are available in the corresponding subnet?

(A) 64
(B) 62
(C) 32
(D) 30

Q72. What is the maximum channel utilization (throughput) of Pure ALOHA?

(A) 100%
(B) 36.8%
(C) 18.4%
(D) 50%

Q73. An Ethernet LAN operates at 10 Mbps. The maximum one-way propagation delay between two stations is 25.6 μs. What is the minimum Ethernet frame size required for CSMA/CD to detect collisions?

(A) 32 bytes
(B) 64 bytes
(C) 128 bytes
(D) 512 bytes

Q74. What is the size of the TCP Header without Options?

(A) 20 bytes
(B) 40 bytes
(C) 60 bytes
(D) 32 bytes

Q75. In a Stop-and-Wait ARQ protocol, the frame transmission time is 1 ms and the one-way propagation delay is 4.5 ms. Assuming negligible acknowledgment transmission time, what is the link utilization?

(A) 10%
(B) 20%
(C) 50%
(D) 11.1%

Q76. Which Software Development Life Cycle (SDLC) model is most appropriate when requirements are well defined, stable, and unlikely to change during development?

(A) Waterfall Model
(B) Spiral Model
(C) Evolutionary Prototyping Model
(D) Agile/Scrum Model

Q77. Which software metric measures the degree of interdependence between software modules?

(A) Cohesion
(B) Coupling
(C) Cyclomatic Complexity
(D) Modularity Ratio

Q78. Which type of testing is performed to verify that modifications to software have not introduced new defects into existing functionality?

(A) Unit Testing
(B) Regression Testing
(C) Integration Testing
(D) Alpha Testing

Q79. A control flow graph has 14 edges, 10 nodes, and one connected component. What is its cyclomatic complexity?

(A) 4
(B) 6
(C) 5
(D) 24

Q80. What is the distinguishing feature of the Spiral Model of software development?

(A) Automated code generation at every stage
(B) Explicit Risk Analysis and Risk Management in every iteration
(C) Zero requirement documentation
(D) Fixed budget and delivery timeline enforced prior to design

Q81. A function accepts a student's age as input, where valid ages range from 18 to 30 (inclusive). Using Boundary Value Analysis (BVA), which of the following test sets provides appropriate boundary coverage?

(A) {17,18,19,29,30,31}
(B) {18,24,30}
(C) {0,18,30,100}
(D) {15,20,25,35}

Q82. What is the primary objective of Software Configuration Management (SCM)?

(A) To automatically fix syntax errors in code
(B) To control, track, and manage changes to software artifacts over time
(C) To eliminate the need for unit testing
(D) To estimate project costs using neural networks

Q83. Software Reverse Engineering is primarily performed to:

(A) Recreate source code without specifications
(B) Analyze an existing software system to extract its design representations and architectural specifications
(C) Convert object-oriented code into procedural code
(D) Automatically bypass license verification modules

Q84. What is the purpose of the #!/bin/bash line at the beginning of a shell script?

(A) It specifies the author of the script.
(B) It specifies the interpreter to be used for executing the script.
(C) It grants execute permission to the script.
(D) It sets the default login shell for the user.

Q85. Which Bash special variable stores the number of positional arguments passed to a shell script?

(A) $*
(B) $@
(C) $#
(D) $$

Q86. Which of the following correctly assigns the value 30 to the Bash variable val?

(A) val = 10 + 20
(B) val=$((10 + 20))
(C) val = $[10 + 20]
(D) set val = 10 + 20

Q87. Which Bash redirection operator appends the standard error stream (stderr) to an existing file?

(A) > file 2>&1
(B) 2>> file
(C) >>2 file
(D) 2> file

Q88. Which built-in AWK variable stores the number of fields in the current input record?

(A) NR
(B) NF
(C) FS
(D) OFS

Q89. What is the output of the following AWK command?

awk '{print $0}' file.txt

(A) Prints the first field of each record
(B) Prints every record of the file
(C) Prints the total number of records
(D) Prints the last field of each record

Q90. What is the output of the following AWK command?

awk 'NR % 2 == 0' file.txt

(A) Prints all odd-numbered lines
(B) Prints all even-numbered lines
(C) Prints lines with an even number of fields
(D) Removes all duplicate lines

Q91. Which sigil is used to denote a scalar variable in Perl?

(A) @
(B) %
(C) $
(D) &

Q92. Given the Perl array

@arr = ("A", "B", "C");

What is the value returned by scalar(@arr)?

(A) "A B C"
(B) "C"
(C) 3
(D) memory address of the array

Q93. Which HTML element is used to embed client-side JavaScript code in an HTML document?

(A) <js>
(B) <script>
(C) <javascript>
(D) <code>

Q94. Which technology enables asynchronous communication between a web browser and a server without reloading the entire web page?

(A) CGI (Common Gateway Interface)
(B) AJAX (Asynchronous JavaScript and XML)
(C) DTD (Document Type Definition)
(D) FTP (File Transfer Protocol)

Q95. Which web security vulnerability allows an attacker to inject malicious client-side scripts into web pages viewed by other users?

(A) SQL Injection (SQLi)
(B) Cross-Site Scripting (XSS)
(C) Cross-Site Request Forgery (CSRF)
(D) Server-Side Template Injection (SSTI)

Q96. In Scrum, who is responsible for managing and prioritizing the Product Backlog?

(A) Scrum Master
(B) Lead Developer
(C) Product Owner
(D) Project Manager

Q97. Which Extreme Programming (XP) practice involves two developers working together at the same workstation?

(A) Collective Ownership
(B) Pair Programming
(C) Continuous Integration
(D) Refactoring

Q98. Test-Driven Development (TDD) advocates which of the following approaches?

(A) Write tests after implementing the code.
(B) Write automated tests before implementing the corresponding code.
(C) Perform testing only after deployment.
(D) Outsource testing to an external QA team.

Q99. Which cryptographic mechanism provides non-repudiation by enabling a sender to prove authorship of a message?

(A) Symmetric Key Encryption
(B) Digital Signatures
(C) Block Ciphers
(D) Salting

Q100. Which protocol provides encrypted communication for HTTPS by operating over TCP?

(A) HTTP/2
(B) SSL/TLS
(C) SSH
(D) IPSec

***