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	CSE
Advt.:	01/2026 dated 09.01.2026
Date of Exam:	03-08-2026
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.

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1	A function that does not return any value should have the return type:
A)	int
B)	float
C)	void
D)	char
2	Which of the following is an actual parameter?
A)	Variable passed during function call
B)	Variable in function definition
C)	Return type
D)	Local variable
3	Which header file contains the printf() function?
A)	string.h
B)	stdlib.h
C)	stdio.h
D)	math.h
4	Array indexing in C starts from:
A)	1
B)	-1
C)	0
D)	Depends on compiler
5	What will be printed? int a[]={5,10,15}; printf("%d",a[1]);
A)	5
B)	10
C)	15
D)	Error
6	Which of the following expressions evaluates to true? `sizeof('A') == sizeof(char)`
A)	Always True
B)	Always False
C)	Depends on Compiler
D)	Compilation Error
7	Which of the following is not a valid C data type?
A)	long double
B)	short int
C)	real
D)	unsigned long

8	What is the output?
	
	int x = 5;
	
	if(x = 10)
	  printf("True");
	else
	  printf("False");

A)	True
B)	False
C)	Error
D)	Garbage
9	Which loop executes at least once?
A)	For
B)	While
C)	do-while
D)	None

10	What will be printed?
	
	int i;
	
	for(i=0;i<5;i++){
	  if(i==3)
	  break;
	  printf("%d ",i);
	}

A)	0 1 2
B)	0 1 2 3
C)	1 2 3
D)	0 1 2 3 4
11	Which data structure follows the LIFO principle?
A)	Queue
B)	Stack
C)	Linked List
D)	Tree
12	Which data structure allows insertion and deletion at both ends?
A)	Queue
B)	Deque
C)	Stack
D)	Heap

13	The worst-case time complexity of Linear Search is:
A)	O(1)
B)	O(log n)
C)	O(n)
D)	$O(n^2)$
14	Which of the following is **not** a characteristic of an algorithm?
A)	Finiteness
B)	Definiteness
C)	Ambiguity
D)	Input/Output

15	What will be the value of p after executing the following?
	
	int a[5] = {10,20,30,40,50};
	int *p = a;
	p++;

A)	Points to 10
B)	Points to 20
C)	Points to 30
D)	Error
16	Encapsulation means:
A)	Hiding implementation details by bundling data and methods together
B)	Inheriting properties
C)	Creating multiple objects
D)	Using pointers
17	Which OOP concept allows the same interface to perform different actions?
A)	Abstraction
B)	Polymorphism
C)	Encapsulation
D)	Aggregation
18	Which operator function overloads the '+' operator?
A)	operator+()
B)	overload+()
C)	plus()
D)	operator_add()
19	Consider the following overloaded operator. Complex operator+(Complex c); This is an example of
A)	Runtime polymorphism
B)	Compile-time polymorphism
C)	Dynamic binding
D)	Virtual inheritance

20	Which feature is the primary advantage of inheritance?
A)	Faster execution
B)	Code reusability
C)	Better memory utilization
D)	Dynamic memory allocation
21	Java Web Development Technologies Cookies are stored:
A)	On the server
B)	In the database
C)	On the client browser
D)	In RAM only
22	Which component receives and processes HTTP requests in Java web applications?
A)	JSP
B)	Servlet
C)	JDBC
D)	EJB
23	Which module of the Spring Framework is commonly used to build RESTful web services?
A)	Spring JDBC
B)	Spring MVC
C)	Spring Security
D)	Spring Batch
24	Which Python framework is classified as a micro web framework?
A)	Django
B)	Pyramid
C)	Flask
D)	Web2Py
25	In ER Diagram a weak entity is represented by_____
A)	Double rectangle
B)	Double ellipse
C)	Dashed rectangle
D)	Double diamond
26	Which relational algebra operation is equivalent to Cartesian Product + Selection
A)	Intersection
B)	Natural Join
C)	Union
D)	Projection
27	Serializability in DBMS ensures:
A)	No deadlocks occur
B)	Transactions always run faster
C)	Consistency of database is preserved
D)	Redundancy is reduced

28	A relation is in 2NF (Second Normal Form) if:
A)	It is in 1NF and has no partial dependency
B)	It is in 1NF and has no transitive dependency
C)	It is in 2NF and has no multivalued attributes
D)	It is in BCNF
29	Which SQL command removes all rows from a table but keeps its structure intact?
A)	Delete
B)	Drop
C)	Truncate
D)	Clear
30	Consider relation Employee(EID, Name, Salary, DeptID) with the constraint Salary > 0. If we try to insert (201, 'Arjun', -15000, 5), which constraint is violated?
A)	Entity Integrity
B)	Key Constraint
C)	Referential Integrity
D)	Domain Constraint
31	Which SQL command is used to undo changes made during a transaction?
A)	Commit
B)	Savepoint
C)	Rollback
D)	Grant
32	Which aggregate function counts all rows including NULL values?
A)	COUNT(column)
B)	COUNT(*)
C)	SUM()
D)	AVG()
33	A table can have how many PRIMARY KEY constraints?
A)	One
B)	Two
C)	Unlimited
D)	Depends on DBMS
34	Which SQL clause is evaluated after GROUP BY?
A)	Where
B)	Having
C)	From
D)	Select Distinct
35	BCNF is satisfied if:
A)	Every relation is in 3NF.
B)	Every determinant is a candidate key.
C)	Every attribute is atomic.
D)	Every non-prime attribute is fully functionally dependent on every candidate key.

36	Which normal form specifically deals with multivalued dependencies?
A)	2NF
B)	3NF
C)	BCNF
D)	4NF
37	Which storage engine is the default in modern MySQL versions?
A)	MyISAM
B)	InnoDB
C)	Memory
D)	CSV
38	In which relational algebra operation is the common column eliminated?
A)	Cartesian Product
B)	Equi Join
C)	Natural Join
D)	Theta Join
39	In an E-R Diagram, derived attributes are represented by:
A)	Ellipse
B)	Dashed Ellipse
C)	Rectangle
D)	Triangle
40	Which of the following is *not* an ACID property of transactions?
A)	Atomicity
B)	Concurrency
C)	Isolation
D)	Durability
41	Identify the Linux command that displays real-time information about running processes.
A)	ls
B)	ps
C)	top
D)	Grep
42	Which Windows utility provides real-time monitoring of CPU, memory, disk, and processes?
A)	Device Manager
B)	Resource Monitor
C)	Task Scheduler
D)	Registry Editor
43	Which process state indicates that a process is waiting for CPU allocation?
A)	Ready
B)	Running
C)	Waiting
D)	Terminated

44	Application and system logs in Windows can be viewed using:
A)	Task Scheduler
B)	Control Panel
C)	Resource Monitor
D)	Event Viewer
45	Which scheduling algorithm is most suitable for interactive operating systems?
A)	FCFS
B)	SJF
C)	Round Robin
D)	SRTF
46	Windows extends physical memory using the:
A)	Recycle Bin
B)	Paging File
C)	BitLocker
D)	Shadow Copy
47	Select the volatile memory device from the following.
A)	SSD
B)	ROM
C)	RAM
D)	Flash Memory
48	External fragmentation is commonly associated with:
A)	Paging
B)	Segmentation
C)	Virtual Memory
D)	Demand Paging
49	Dynamic memory allocated during program execution is stored in the:
A)	Heap
B)	Stack
C)	Cache
D)	Register
50	A page fault occurs when:
A)	The requested page is absent from physical memory
B)	RAM becomes full
C)	CPU cache is cleared
D)	The process terminates unexpectedly
51	In Linux, every file and directory is associated with a:
A)	Process ID
B)	Inode
C)	Port Number
D)	Socket

52	NTFS is primarily the default file system for:
A)	Linux
B)	macOS
C)	Windows
D)	Android
53	A file system that supports journaling helps to:
A)	Recover more quickly after a system crash
B)	Reduce CPU utilization
C)	Compress files automatically
D)	Increase internet speed
54	Which of the following is not a common file access method?
A)	Sequential access
B)	Direct access
C)	Indexed access
D)	Round-robin access
55	Which scheduling algorithm may cause starvation?
A)	FCFS
B)	Shortest Job First (SJF)
C)	FIFO
D)	Round Robin
56	The service model that provides virtual machines, storage, and networking is:
A)	SaaS
B)	PaaS
C)	IaaS
D)	FaaS
57	A cloud load balancer distributes:
A)	Storage blocks
B)	Network traffic across multiple servers
C)	User accounts
D)	Memory pages
58	The command hostname displays the:
A)	Computer name
B)	IP address
C)	Kernel version
D)	Logged-in user

59	Which system call is used to create a new process in UNIX/Linux? A) exec() B) wait() C) fork() ✓ D) create()
A)	create()
B)	fork()
C)	exec()
D)	wait()
60	In Linux the *sudo* command is used to:
A)	Switch users
B)	Start a service
C)	Shut down the system
D)	Run with elevated privileges
61	Which symbol is used to start a formula in Excel?
A)	+
B)	=
C)	@
D)	#
62	Which PowerPoint view displays all slides as thumbnails?
A)	Normal View
B)	Reading View
C)	Slide Sorter View
D)	Notes Page View
63	Which of the following is NOT an output of Mail Merge?
A)	Letters
B)	Envelopes
C)	Labels
D)	Charts
64	If A1=10, B1=20, C1=30, what is the output? =IF(A1+B1>C1,"Yes","No")
A)	Yes
B)	No
C)	TRUE
D)	FALSE

65	What will be the result? =ROUND(25.678,1)
A)	25.6
B)	25.7
C)	26
D)	25
66	Which hardware component retains BIOS settings even when the computer is powered off?
A)	RAM
B)	ROM
C)	CMOS Battery
D)	Cache
67	A gaming computer experiences frequent lag while loading games, although it has a high-end processor and 32 GB RAM. Which hardware upgrade is most likely to improve loading time?
A)	Replace HDD with SSD
B)	Upgrade the monitor
C)	Increase RAM to 64 GB
D)	Replace the keyboard
68	Which statement about a compiler is TRUE?
A)	It executes one line at a time.
B)	It generates an executable program after compilation.
C)	It translates Assembly language.
D)	It is slower than an interpreter during execution.
69	What is a plug-in in computer software?
A)	A hardware device connected to a computer
B)	A software component that adds specific features to an existing application
C)	An operating system
D)	A programming language
70	Which of the following is NOT a function of a firewall?
A)	Blocking unauthorized access
B)	Filtering network packets
C)	Detecting malicious traffic based on rules
D)	Increasing the processor clock speed
71	What is the purpose of the quarantine feature in antivirus software?
A)	Permanently delete files immediately
B)	Isolate suspicious files to prevent them from causing harm
C)	Encrypt files
D)	Compress files

72	The default port number for HTTPS is:
A)	80
B)	22
C)	25
D)	443
73	HTTP is considered:
A)	Stateful
B)	Connection-oriented only
C)	Stateless
D)	Peer-to-peer
74	Which HTTP response code indicates successful execution of a request?
A)	100
B)	200
C)	300
D)	500
75	Which statement is TRUE regarding HTTP and HTTPS?
A)	HTTP encrypts all transmitted data.
B)	HTTPS prevents all cyber attacks.
C)	HTTPS provides confidentiality, integrity, and server authentication using TLS.
D)	HTTPS does not require digital certificates.
76	Which web server is developed by Microsoft?
A)	Apache HTTP Server
B)	LiteSpeed
C)	IIS (Internet Information Services)
D)	Tomcat
77	PCI DSS is primarily designed to protect:
A)	Medical records
B)	Government classified information
C)	Payment card information
D)	Source code repositories
78	Which component resolves a domain name to the IP address of a web server?
A)	DHCP
B)	DNS
C)	SMTP
D)	FTP
79	_____ protocol is used for reliable, connection-oriented communication?
A)	UDP
B)	IP
C)	TCP
D)	ICMP

80	_____ OSI layer is responsible for framing?
A)	Physical Layer
B)	Data Link Layer
C)	Network Layer
D)	Session Layer
81	The TCP/IP model consists of:
A)	3 layers
B)	4 layers
C)	5 layers
D)	7 layers
82	Which protocol automatically assigns IP addresses to hosts?
A)	ARP
B)	ICMP
C)	DHCP
D)	FTP
83	Static routing is preferred when:
A)	The network topology changes frequently.
B)	The network is small and rarely changes.
C)	Automatic route updates are required.
D)	Multiple ISPs are used.
84	If the TTL value becomes zero, the router:
A)	Broadcasts the packet.
B)	Drops the packet and sends an ICMP Time Exceeded message.
C)	Sends the packet to all neighbors.
D)	Increases the TTL.
85	An IPv6 address consists of:
A)	32 bits
B)	64 bits
C)	128 bits
D)	256 bits
86	_____ address is reserved for loopback testing?
A)	10.0.0.1
B)	127.0.0.1
C)	255.255.255.255
D)	224.0.0.1
87	Which subnet mask provides 254 usable host addresses?
A)	255.255.255.192
B)	255.255.255.224
C)	255.255.255.0
D)	255.255.255.252

88	Which IPv4 address is used to indicate "this host" before obtaining an IP address?
A)	127.0.0.1
B)	255.255.255.255
C)	0.0.0.0
D)	169.254.0.1
89	In a broad sense, a railway track is an example of:
A)	Simplex
B)	Half duplex
C)	Full duplex
D)	All of the above
90	Which socket type provides reliable, connection-oriented communication?
A)	SOCK_DGRAM
B)	SOCK_STREAM
C)	SOCK_RAW
D)	SOCK_PACKET
91	Which of the following is NOT a valid socket programming function?
A)	recv()
B)	send()
C)	transmit()
D)	accept()
92	_____cryptographic service ensures that data has not been modified during transmission?
A)	Confidentiality
B)	Integrity
C)	Availability
D)	Authorization
93	Which algorithm is designed primarily for generating cryptographic hash values?
A)	RSA
B)	SHA-256
C)	AES
D)	ECC
94	_____cryptographic mechanism provides non-repudiation?
A)	Symmetric encryption
B)	Hashing only
C)	Digital Signature
D)	Compression
95	_____tries every possible key until the correct one is found?
A)	Replay attack
B)	Brute-force attack
C)	Collision attack
D)	Birthday attack

96	_____type of malware encrypts a victim's files and demands payment?
A)	Worm
B)	Spyware
C)	Ransomware
D)	Adware
97	Which statement regarding cybersecurity is correct?
A)	Installing antivirus software alone completely secures a system.
B)	Strong cyber security requires multiple layers of defense (Defense in Depth).
C)	Encryption prevents all cyberattacks.
D)	Firewalls eliminate the need for authentication.
98	Which protocol provides secure remote login over an untrusted network?
A)	FTP
B)	Telnet
C)	SSH
D)	HTTP
99	Which of the following is NOT a network security protocol?
A)	IPSec
B)	SSL/TLS
C)	SSH
D)	RIP
100	GDPR stands for:
A)	General Data Protection Regulation
B)	Global Data Privacy Regulation
C)	General Database Protection Rules
D)	Government Data Protection Regulation

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