

1

Question: What shift in computing paradigm has been driven by the increasing demand for Internet services?

- A) From High-Throughput Computing (HTC) to High-Performance Computing (HPC)
- B) From Centralized Computing to Distributed Computing
- C) From High-Performance Computing (HPC) to High-Throughput Computing (HTC)
- D) From Parallel Computing to Cloud Computing

Correct Answer: C

2

Question: According to the text, what is a major challenge for HTC technology?

- A) Increasing batch processing speed only
- B) Addressing cost, energy, security, and reliability issues
- C) Focusing solely on raw speed performance
- D) Limiting the number of concurrent users

Correct Answer: B

3

Question: Who declared, "The network is the computer"?

- A) Leonard Klienrock
- B) John Gage
- C) David Patterson
- D) Rajkumar Buyya

Correct Answer: B

4

Question: Which computing paradigm utilizes all computer resources centralized in one physical system?

- A) Parallel computing
- B) Distributed computing
- C) Cloud computing
- D) Centralized computing

Correct Answer: D

5

Question: Which type of parallelism involves executing multiple instructions simultaneously?

- A) Bit-level parallelism (BLP)
- B) Instruction-level parallelism (ILP)
- C) Data-level parallelism (DLP)
- D) Task-level parallelism (TLP)

Correct Answer: B

6

Question: What is a major challenge in achieving successful Task-level parallelism (TLP)?

- A) Hardware limitations
- B) Compiler limitations
- C) Programming and compilation complexity
- D) Lack of theoretical understanding

Correct Answer: C

7

Question: What does IoT stand for?

- A) Internet of Things
- B) Interconnected Operating Technologies
- C) Integrated Online Transactions
- D) International Organization of Telecommunications

Correct Answer: A

8

Question: What does the unit "GE" refer to in the context of network bandwidth?

- A) Giga Ethernet
- B) General Electric
- C) Global Environment
- D) Graphical Element

Correct Answer: A

9

Question: Which technology is mentioned as addressing the limitations of CPUs in exploiting massive DLP?

- A) Multicore CPUs
- B) Many-core GPUs
- C) SSDs
- D) System-Area Interconnects

Correct Answer: B

10

Question: What is a major advantage of SSDs over traditional hard drives?

- A) Lower cost
- B) Higher capacity
- C) Increased speed
- D) Lower power consumption

Correct Answer: C

11

Question: Which network connects servers to network storage like disk arrays?

- A) LAN
- B) SAN
- C) NAS
- D) VPN

Correct Answer: B

12

Question: What is the middleware layer between VMs and the host platform called?

- A) Virtual Machine Manager (VMM)
- B) Virtual Infrastructure
- C) Guest OS
- D) Host OS

Correct Answer: A

13

Question: What is a bare-metal VM?

- A) A VM without an OS
- B) A VM running directly on the hardware
- C) A VM with minimal resources
- D) A VM used for testing purposes

Correct Answer: B

14

Question: Which VM operation involves moving a VM from one hardware platform to another?

- A) Multiplexing
- B) Suspension
- C) Resumption

D) Migration

Correct Answer: D

15

Question: According to a 2009 IDC report, what percentage of data center costs is attributed to IT equipment purchases?

A) 60%

B) 33%

C) 30%

D) 18%

Correct Answer: C

16

Question: What does SSI stand for in the context of cluster computing?

A) Single-System Image

B) Scalable System Integration

C) Secure System Infrastructure

D) Standardized System Interface

Correct Answer: A

17

Question: What are MPPs?

A) Massively Parallel Processors

B) Multi-Purpose Platforms

C) Managed Processing Pools

D) Modular Programming Paradigms

Correct Answer: A

18

Question: What is the primary function of a computing grid?

- A) To connect clients to a central server
- B) To enable close interaction between applications on distant computers
- C) To share files between peers
- D) To provide virtualized resources on demand

Correct Answer: B

19

Question: What is the main difference between a P2P network and a client-server architecture?

- A) P2P is server-oriented, while client-server is client-oriented
- B) P2P is client-oriented, while client-server is server-oriented
- C) P2P uses centralized resources, while client-server uses distributed resources
- D) P2P is used for large-scale computations, while client-server is used for small-scale tasks

Correct Answer: B

20

Question: What is an overlay network in a P2P system?

- A) A physical network connecting all peers
- B) A logical network formed by peer IDs based on communication needs
- C) A secure network used for protecting copyrighted content
- D) A network used for connecting P2P networks to the Internet

Correct Answer: B

21

Question: What is a key characteristic of cloud computing?

- A) Static resource allocation
- B) Limited scalability

C) On-demand resource provisioning

D) Tight coupling between hardware and software

Correct Answer: C

22

Question: Which cloud service model provides users with access to infrastructure resources like servers and storage?

A) IaaS

B) PaaS

C) SaaS

D) DaaS

Correct Answer: A

23

Question: Which cloud service model focuses on delivering browser-initiated application software?

A) IaaS

B) PaaS

C) SaaS

D) DaaS

Correct Answer: C

24

Question: What does SOA stand for?

A) Service-Oriented Architecture

B) Software-Oriented Application

C) System-Oriented Approach

D) Security-Oriented Administration

Correct Answer: A

25

Question: What is the function of filter services (fs) in an SOA?

- A) To collect raw data from sensors
- B) To process and analyze raw data
- C) To eliminate unwanted raw data
- D) To store processed data in a database

Correct Answer: C

26

Question: What is a key difference between grids and clouds?

- A) Grids emphasize elastic resources, while clouds apply static resources.
- B) Grids apply static resources, while clouds emphasize elastic resources.
- C) Grids are only used for scientific computing, while clouds are used for business applications.
- D) Grids are based on centralized computing, while clouds are based on distributed computing.

Correct Answer: B

27

Question: What is a major advantage of a distributed OS?

- A) Increased system overhead
- B) Reduced resource sharing
- C) Coherent and efficient resource management
- D) Increased complexity in application development

Correct Answer: C

28

Question: What unit is commonly used to measure system throughput?

- A) MIPS
- B) Mbps



C) GE

D) GB

Correct Answer: A

29

Question: Which dimension of scalability refers to upgrading the OS or compilers?

A) Size scalability

B) Software scalability

C) Application scalability

D) Technology scalability

Correct Answer: B

30

Question: What does MTTF stand for?

A) Mean Time To Failure

B) Maximum Time To Finish

C) Minimum Time To Fix

D) Mean Time To Freeze

Correct Answer: A

31

Question: What is a single point of failure?

A) A failure that affects a single component of the system

B) A failure that can be easily repaired

C) A failure that pulls down the operation of the entire system

D) A failure that occurs frequently

Correct Answer: C

32

Question: What is a Denial of Service (DoS) attack?

- A) An attack that leaks confidential information
- B) An attack that alters user data
- C) An attack that results in a loss of system operation
- D) An attack that installs a Trojan horse

Correct Answer: C

33

Question: What is collusive piracy?

- A) Illegal sharing of copyrighted content within a P2P network
- B) Downloading copyrighted content from a central server
- C) Copying software without a license
- D) Distributing pirated movies on physical media

Correct Answer: A

34

Question: What does DPM stand for in the context of energy efficiency?

- A) Distributed Power Management
- B) Dynamic Performance Monitoring
- C) Data Processing Module
- D) Digital Power Meter

Correct Answer: A

35

Question: According to the text, what percentage of servers in a company are estimated to be idling on a daily basis?

- A) 5%

B) 15%

C) 30%

D) 60%

Correct Answer: B

36

Question: What is the primary goal of reducing energy in active servers?

A) To improve system performance

B) To decrease energy consumption with minimal impact on performance

C) To reduce the cost of hardware

D) To increase the lifespan of servers

Correct Answer: B

37

Question: Which benchmark is mentioned as no longer optimal for measuring system performance in the age of internet computing?

A) SPECint

B) Dhrystone

C) Whetstone

D) Linpack

Correct Answer: D

38

Question: What technology enables the dynamic mapping of system resources to specific applications in a virtual infrastructure?

A) Cloud computing

B) Virtualization

C) Grid computing

D) Parallel computing

Correct Answer: B

39

Question: What triggered the development of the Internet of Things (IoT)?

A) The introduction of the internet

B) The maturity of RFID, GPS, and sensor technologies

C) The development of cloud computing

D) The increase in demand for HPC

Correct Answer: B

40

Question: What is the main purpose of a hypervisor?

A) To manage virtual machines

B) To connect to the internet

C) To run applications

D) To store data

Correct Answer: A