1.

\_\_\_\_\_\_\_\_\_\_\_\_\_does not need to modify the host OS. It relies on binary translation

Partial virtualization

Full virtualization

Paravirtualization

Binary virtualization

2. VMware puts the VMM at \_\_\_\_\_\_and the guest OS at \_\_\_\_\_\_.

Ring 0, Ring 1

Ring 1, Ring 0

Ring 1, Ring 2

Ring 1, Ring 3

3. In Para-Virtualization with Compiler Support \_\_\_\_\_\_\_\_is modified to replace the privileged and sensitive instructions with hypercalls to the hypervi-sor or VMM.

Host OS kernel

VM

Guest OS kernel

Host OS

4. VMware implements \_\_\_\_\_\_\_\_\_\_\_\_either in the desktop environment, by means of Type II hypervisors, or in the server environment, by means of Type I hypervisors

Para-virtualization

Partial virtualization

Application virtualization

full virtualization

5. In which of the following the VM is installed as a Type 1 Hypervisor directly onto the hardware

full virtualization

Partial virtualization

Para-virtualization

Desktop virtualization

6. Which type of Hypervisor is shown in the following figure?

a) Type 1

b) Type 2

c) Type 3

d) Type 4

7. Which of the following should be placed in second lowermost layer for the following figure?

a) Host Operating System

b) Software

c) VM

d)Hypervisor

8. Which of the following allows a virtual machine to run on two or more physical processors at the same time?

a) Virtual SMP

b) Distributed Resource Scheduler

c) vNetwork Distributed Switch

d) Storage VMotion

9. In\_\_\_\_\_\_\_\_\_\_, every request by a subject to access an object in a computer system must undergo a valid and effective authorization procedure.

Defense in depth

Least privilege

Complete mediation

Open design

10. Which of the following is not IaaS related security issue?

Multitenancy

Identity management and access control

Hypervisor security

Resource locality

11. Stream Ciphers encrypt pseudorandom sequences with bits of plaintext in order to generate ciphertext, usually with\_\_\_\_\_ operation.

OR

AND

XOR

NOR

12. Which of the following statement is not correct related to Cipher Block Chaining (CBC)?

CBC is a mode of operation for stream ciphers.

Initialization vector (IV) is used in CBC in the initial phase.

It has better resistive nature towards cryptanalysis than ECB

13. Which of the following modes of operations can be followed for both stream ciphers as well as block ciphers?

CBC (Cipher Block Chaining)

ECB (Electronic Code Book)

CFB (Cipher text Feed Back)

Counter (CTR) Mode

14. Consider the following steps,

Substitution bytes

Shift Rows

Mix columns

Add round key

The above steps are performed in each round of which of the following ciphers?

*Rail fence cipher*

*Data Encryption Standard (DES)*

*Advance Encryption Standard (AES)*

*RSA*

15. What is the output of a cryptographic hash function means?

A variable set of bits

A fixed set of bits, derived from one-way mathematical operations

An output which may be easily discovered by an adversary

Outputs of such functions are of no importance

16. Which of the following is strongest encryption technique?

DES ( Data Encryption Standard)

Double DES

Triple DES

AES (Advance Encryption Standard)

17.

| Which of the following is false for ECB mode of operation?    i) The Plain text is broken into blocks of size 128 bytes  ii) Blocks can be swapped, repeated, replaced without recipient noticing  iii) Good for short data  iv) Encryption of each block is done separately using a randomly generated key for each block |  |
| --- | --- |
|  |  |
|  |  |

Only i

ii) and iii)

i) and iv)

i) ii) and iv)

18. Which of the following statements are true ?

i) In the CBC mode, the plaintext block is XORed with previous ciphertext block before encryption

ii) The CTR mode does not require an Initialization Vector

iii) The last block in the CBC mode uses an Initialization Vector

iv) In CBC mode repetitions in plaintext do not show up in ciphertext

| iii |  |
| --- | --- |
| b. | ii) and iv) |
| c. | All the Statements are true |
| d. | i) ii) and iv) |

19. Which of the following can be classified under advantages and disadvantages of OFB mode?

i) Transmission errors

ii) A bit error in a ciphertext segment

iii) Cannot recover from lost ciphertext segments

iv) Ciphertext or segment loss

| a. | Advantages: None; Disadvantages: All |
| --- | --- |
| b. | Advantages: All; Disadvantages: None |
| c. | Advantages: i); Disadvantages: ii) iii) iv) |
| d. | Advantages: i); ii) Disadvantages: iii) iv) |

20. Which of the following step is involved in Planning Phase

Cloud Computing Value Proposition

Cloud Computing Strategy Planning

C. IT Architecture development

Selecting Cloud Computing Provider

21. Geographic distribution of data across a cloud provider’s network is a problem for

many enterprises because it:

A. Breaks compliance regulations

B. Adds latency

C. Raises security concerns

D. Makes data recovery harder

22. This is a software distribution model in which applications are hosted by a vendor

or service provider and made available to customers over a network, typically the

Internet.

A. Platform as a Service (PaaS)

B. Infrastructure as a Service (IaaS)

C. Software as a Service (SaaS).

D. DbaS

23. Which of the following is not PaaS in cloud environment?

Database servers

OS and applications softwares

Virtual Machines

Web server

24. Services to support database management system in any cloud based system should be part of \_\_\_\_\_\_

SaaS

IaaS

PaaS

EaaS

25. IaaS provides\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

VM, Virtual storage, virtual infrastructure

VM, OS, Applications

Operating environment with applications

Physical machines with network

26. Which one of the following is disadvantage of CC?

QoS cannot be guaranteed

Cloud applications suffer from inherent latency

CC applications are not reliable

Utilization is poor

27. Which one of the following business types is least suitable for deploying on cloud?

Web content delivery services

CRM applications

Data analytics and computation

Billing application

28. Which of the following is not a possible parameter of SLA in Cloud?

Availability of service

Response time or latency

Electricity cost

Warranty of service

29. A low level program that provides system resources to VMs is called\_\_\_\_\_\_\_\_\_\_\_

Guest OS

Hypervisor

Host OS

VM Box

30. \_\_\_\_computing refers to applications and services that run on a distributed network using virtualized resources.

Distributed

Parallel

Cloud

Grid

31. Which of the following statement is wrong?

The vendor is responsible for all the operational aspects of the service

The customer is responsible only for his interaction with the platform.

Google’s App Engine platform is PaaS offering.

SaaS require specific application to be accessed globally over the internet.

32. In which one of the following, a strategy record or Document is created respectively to the events, conditions a user may face while applying cloud computing mode.

Cloud Computing Value Proposition

Cloud Computing Strategy Planning

Planning Phase

Business Architecture Development

33. What facet of cloud computing helps to guard against downtime and determines costs?

Service-level agreements

Application programming interfaces

Virtual private networks

Bandwidth fees

34. \_\_\_\_\_\_\_ as a Service is a cloud computing infrastructure that creates a development environment upon which applications may be build

Infrastructure

Service

Platform

Environment

35. SaaS supports multiple users and provides a shared data model through \_\_\_\_\_\_\_\_model.

single-tenancy

multi-tenancy

multiple-instance

shared tenancy

36 .Which of the following virtualization has the main benefits like user mobility, portability, and easy management of software installation, updates, and patches.

| (a) | Application virtualization |
| --- | --- |
| (b) | Network virtualization |
| (c) | Desktop virtualization |
| (d) | Storage virtualization |

37. \_\_\_\_\_\_\_\_\_\_\_\_refers to the ability to run a program, most likely an operating system, directly on top of a virtual machine and without any modification, as though it were run on the raw hardware

a. Para virtualization

b. Full virtualization

c. Partial Virtualization

d. hardware assisted virtualization

38 . \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_virtualization is also called system virtualization

Desktop

Hardware-level

Operating system

Application

39. In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_phase of cloud service lifecycle, all management knowledge required for a certain type of cloud service is captured in a service template.

a. Production

b. Subscription and instantiation

c. offering

d. definition

40. Which one of the following is an example of application level virtualization ?

a. Xen

b. VMware

c. Wine

d. Microsoft Hyper-V

|  | 41. Which cloud should be deployed when the company is short on  budget but business autonomy is the most important? | |
| --- | --- | --- |
|  | Hybrid Cloud | Public Cloud |
|  | Community Cloud | Private Cloud |
|  | | |
|  |  | |
|  | | |
|  | 42. Choose the correct requirement for building the cloud infrastructure. | |
|  | Familiarity with Databases | Understanding of  Cloud infrastructure. |
|  | Service and resource  management. | Knowledge of Agile  Development. |
|  | | |
|  | 43. Which is the third step in lifecycle of Cloud computing solution? | |
|  | Define the Hardware | Define the storage |
|  | Define the purpose | Define and Security |
|  | | |
|  | 44. Centralized cloud monitoring is most useful when \_\_\_\_\_\_\_\_\_\_ | |
|  | an organization uses a single cloud application | an organization uses a multiple cloud application |
|  | the application is totally hosted on the cloud | applications must span hybrid architectures |
|  | | |
|  | | |
|  | 45. Which of the following attacks is a potential security threat for altering public keys? | |
|  | Birthday Attacks | Boomerang Attacks |
|  | Cube Attacks | Man-in-the-middle attacks |
|  | | |
|  |  | |
|  | 46. Which form of virtualization serves the same purpose of storage virtualization: providing a better quality of service rather than emulating a different environment? | |
|  | Storage Virtualization | Desktop virtualization |
|  | Application Server Virtualization | Network Virtualization |
|  | | |
|  | 47. Which of the following is Monolithic Hypervisor? | |
|  | Integrity Multivisor | QNX |
|  | ESXi platform by VMware | Microsoft Hyper-V |
|  | | |
|  | 48. In which of the following the VM is installed as a Type 1 Hypervisor directly onto the hardware? | |
|  | full virtualization | Partial virtualization |
|  | Para-virtualization | Desktop virtualization |
|  | | |
|  |  | |
|  | 49. Which of the following is NOT a part of planning phase? | |
|  | Business Architecture Development | IT Architecture Development |
|  | Maintenance and Technical Service | Transformation Plan Development |
|  | | |
|  | 50. Which of the following is NOT a benefit of a PaaS for aligning IT and business? | |
|  | DevOps | Streamlines development |
|  | Reduces operational complexity | Orchestration of applications |
|  | | |
|  | 51. Which of the following outlines how a business will continue operating during an unplanned disruption in service? | |
|  | Business Continuity Plan | Business Operation Plan |
|  | Business Execution Plan | Business Recovery Plan |
|  | | |
|  | 52. Which of the following type of fault tolerance technique is used only when one copy of the task or computation is made to run at a time? This technique performs self-repair. | |
|  | Dynamic recovery | Fault Masking |
|  | Software fault tolerance | Proactive fault tolerance |
|  | | |
|  | 53. What is the purpose of Amazon Elastic Compute Cloud? | |
|  | Provides customers with an isolated section of the AWS cloud where they can launch AWS resources in virtual network that they define | Provides resizable computing capacity in the cloud |
|  | Provides a simple web services interface that customers can use to store and retrieve any amount of data from anywhere on the Web | Provides a web service allowing customers to easily set up, operate and scale relational databases in the cloud |
|  | | |
|  | 54. How one-to-many and many-to-many relationships can be accomplished by Google Query Language of Google App Engine | |
|  | Join | GoogleRelation |
|  | ReferenceProperty | AppScale |
|  | | |

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|  | 56. In which one of the following, a strategy record or Document is created respectively to the events, conditions a user may face while applying cloud computing mode? | |
|  | Business Architecture Development | Cloud Computing Strategy Planning |
|  | Planning Phase | Cloud Computing Value Proposition |
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|  | 58. “It is a technique that designs the system for periodic reboots. It restarts the system with clean state and helps to fresh start”  Which of the following fault tolerance technique is this? | |
|  | Self-Healing | Software Rejuvenation |
|  | Preemptive Migration | Proactive fault tolerance |
|  | | |
|  | 59. In Windows Azure, which service is used to manage resources? | |
|  | Log Analytics | Azure Portal |
|  | Application Insights | Azure Resource Manager |
|  | | |
|  | 60. Which of the following has stopped using Amazon S3 services since 2016 and developed its own cloud server? | |
|  | Pinterest | Reddit |
|  | Dropbox | Bitcasa |

|  | 61. Which of these is not one of the essential characteristics of cloud computing according to NIST? | |
| --- | --- | --- |
|  | Resource pooling | Rapid elasticity |
|  | Multi-tenancy | Broad network access |
|  |  | |
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|  | 63. Virtualization layer controls the environment in which the guest programs are executed. Which type of virtualization characteristic is mentioned here? | |
|  | Emulation | Aggregation |
|  | Isolation | Sharing |
|  | | |
|  | 64. Which of the following approach eliminates the additional overhead of binary translation and improves the overall system efficiency and performance? | |
|  | Hardware-Assisted Virtualization | Paravirtualization |
|  | Full virtualization | Operating-System-level virtualization |
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|  | 66. Which of the following terms refers to a deployment model in which an application runs in an enterprise’s private cloud or data center but uses public cloud resources to support spikes in user demand? | |
|  | Cloud spiking | Cloud bursting |
|  | Cloud bubble | Cloud blasting |
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|  | 69. Development, Staging and production should be as similar as possible is definition of which 12 factor app? (Mann sir zindabad) | |
|  | Concurrency | Disposability |
|  | Dev/Prod Parity | Processes |
|  | | |
|  | 70. How is distributed tracing used in microservices? | |
|  | As a mechanism to change the behavior of a microservice at runtime | As a mechanism to observe the behavior of distinct system calls between and within microservices |
|  | As a mechanism to transfer log management between a given host on demand | As a mechanism to ensure that failed microservices are resurrected properly |
|  | | |
|  | 71. What are the few issues with Monolithic Architecture? (Varun Sir) | |
|  | Easily deployable | Each update will require re deployment of the whole application |
|  | Reliability | It can adopt new technologies easily |
|  | | |
|  | 72. Application based Microservice architecture originated from which type of architecture?(Varun sir) | |
|  | Monolithic Architecture | Client - Server Architecture |
|  | Service - Oriented Architecture | Distributed Architecture |
|  | | |
|  | 73. Which of the following is true regarding DevOps Architecture (Wuhu Aarjav) | |
|  | DevOps is an excellent approach for quick development and deployment of applications. | Developing DevOps is very cheap |
|  | It's response to market changes is low | Transportation cost increases |
|  | | |
|  | 74. What is not a DevOps Architecture feature? (wuhu aarjav again) | |
|  | Automation | Privacy |
|  | Integration | Configuration Management |
|  | | |
|  | 75. Which of these libraries can perform server-to-server authentication? (aarjav on a roll) | |
|  | google-auth | google-cloud-vision |
|  | google-cloud-monitoring | google-cloud-bigtable |
|  | | |
|  | 76. Which of the following command is used to create a new deployment in Kubernetes? | |
|  | Kubernetes set deployment | Kubernetes get deployment |
|  | Kubectl run | Kubernetes set run |
|  | | |
|  | 77. Which category of security tool does Wireshark belong to? | |
|  | Encryption Tools | Web Vulnerability Scanning Tools |
|  | Packet Sniffers and Password Auditing Tools | Network Defense Wireless Tools |
|  | | |
|  | 78. Which of the following is an emerging cloud trend that involves storing data and information in localized data centers closer to the devices that use them? | |
|  | Grid Computing | Edge computing |
|  | Ubiquitous Computing | Hybrid Computing |
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|  | 81. Which of the following Spring Boot annotations auto-configures the bean that is present in the classpath and configures it to run the methods? | |
|  | @AutoConfiguration | @Required |
|  | @EnableAutoConfiguration | @Configuration |
|  | | |
|  | 82. Which of the following states the meaning of "bounded context" in microservices? | |
|  | The cloud provider's region where the microservice operates | How a microservice uses memory |
|  | The logical domain represented by the data consumed and emitted by a microservice according to the data's purpose, structure and meaning | The common characteristics within a collection of entities in one or many business domains |
|  | | |
|  | 83. Consider the statement- “Any application that follows this principle is completely self-contained and standalone. It exports HTTP as a service and doesn’t require any server like a tomcat to listen to requests.”  Which of the following factor is related to this statement? | |
|  | Port Binding | Concurrency |
|  | Build, Release and Run | Config |
|  | | |
|  | 84. What benefit industry will get if they have Development and Operations as a shared tool? | |
|  | This is a benefit of automating and enabling low-risk releases | This is a benefit that Development shares when doing pager rotation duties with Operations |
|  | With a unified backlog everyone prioritizes improvement projects from a global perspective, selecting work that has the highest value to the organization or has the most impact on reducing the technical debt | his is a benefit of embedding Operations engineers into our service teams |
|  | | |
|  | 85. Which of the following command is run on Google Cloud to display all data associated with a VM? | |
|  | gcloud describe VM\_NAME | gcloud compute describe VM\_NAME |
|  | gcloud compute instances describe VM\_NAME | gcloud instances describe VM\_NAME |
|  | | |
|  | 86. Which of the following command is used to run images as container? | |
|  | $ Sudo docker run container name | $ Sudo docker run -i -t alpine /bin/bash |
|  | $ docker PS | $ Sudo docker run -i /bin/bash |
|  | | |
|  | | |
|  | 86. Which of the following industries already adopted multi cloud interconnect relationship since 2019 to take advantage of both networking and ML capabilities respectively? | |
|  | Oracle-IBM | Oracle-Microsoft |
|  | Microsoft-TCS | Microsoft-Amazon |

Question statement

Which of the following essential characteristics of Cloud Computing states that "Resource usage can be monitored, controlled, and reported providing transparency for both the provider and consumer of the utilized service"

| On-demand self-service |  |
| --- | --- |
|  | Elastic resource pooling |
|  | Measured service |
|  | Rapid elasticity |

Which of the following describe the ways with which the cloud services can be deployed or made available to its customers, depending on the organizational structure and the provisioning location

| Virtualization |  |
| --- | --- |
|  | Developement models |
|  | Cloud Service models |
|  | Deployment models |

Services to support database management system in any cloud based system should be part of \_\_\_\_\_\_

| SaaS |  |
| --- | --- |
|  | IaaS |
|  | PaaS |
|  | EaaS |

Which one of the following business types is least suitable for deploying on cloud?

| Web content delivery services |  |
| --- | --- |
|  | CRM applications |
|  | Data analytics and computation |
|  | Billing application |

Which of the following is primary limitation of Community Cloud?

| Limited control on the infrastructure configurations |  |
| --- | --- |
|  | Scaling up on hardware |
|  | Autonomy of an organization is lost. |
|  | Operational efficiency is difficult to achieve |

SaaS supports multiple users and provides a shared data model through \_\_\_\_\_\_\_\_model.

Options:

|  | single-tenancy |
| --- | --- |
|  | multi-tenancy |
|  | multiple-instance |
|  | shared tenancy |

Which of the following service is provided by IaaS?

Options:

|  | Programming languages |
| --- | --- |
|  | Deployment tools |
|  | Compute |
|  | Business Services |

Which of the following service is not provided by SaaS?

Options:

|  | Social networks |
| --- | --- |
|  | Document management |
|  | Mail services |
|  | Application frameworks |

Which one of the following shoud have all nodes must run on the same Operating system?

Options:

|  | Cloud Computing |
| --- | --- |
|  | Cluster Computing |
|  | Grid Computing |
|  | Mobile Computing |

Cloud applications improve \_\_\_\_\_\_\_\_\_\_by allowing groups of people to quickly and easily share information in the cloud via shared storage.

Options:

|  | mobility |
| --- | --- |
|  | Col laboration |
|  | maintenance |
|  | dependancy |

Which of the following OpenStack service enables users to create and attach interfaces to networks?

Options:

|  | Ceilometer |
| --- | --- |
|  | Cinder |
|  | Keystone |
|  | Neutron |

What is the task of Swift in OpenStack Services?

Options:

|  | Allows automated infrastructure deployment |
| --- | --- |
|  | Manages images in different formats |
|  | Provides authorization and authentication for users |
|  | Storage platform integrated directly into applications |

Question statement

Which of the following Openstack component used for managing large networks of the virtual machine?

Options:

|  | Image Service |
| --- | --- |
|  | Openstack tenant |
|  | OpenStack Object Storage |
|  | OpenStack Compute |

Which of the following is correct differentiating point between OpenStack and CloudStack?

Options:

|  | In OpenStack, storage is categorized into primary and secondary storage. While in CloudStack, it is categorized into Block Storage and Object Storage. |
| --- | --- |
|  | CloudStack user interface is based on JQuery and JSP while OpenStack UI is based on Django |
|  | In CloudStack, storage is categorized into primary and secondary storage. While in OpenStack, it is categorized into Block Storage and Object Storage. |
|  | Platform supported by CloudStack is Java while OpenStack is Cross platform supported. |

Which of the following virtualization has the main benefits like user mobility, portability, and easy management of software installation, updates, and patches?

Options:

|  | Application virtualization |
| --- | --- |
|  | Network virtualization |
|  | Desktop virtualization |
|  | Storage virtualization |

\_\_\_\_\_\_\_\_\_\_\_\_refers to the ability to run a program, most likely an operating system, directly on top of a virtual machine and without any modification, as though it were run on the raw hardware

Options:

|  | Para virtualization |
| --- | --- |
|  | Full virtualization |
|  | Partial Virtualization |
|  | hardware assisted virtualization |

Which one of the following is an example of application level virtualization ?

Options:

|  | Xen |
| --- | --- |
|  | VMware |
|  | Wine |
|  | Microsoft Hyper-V |

Which of the following is a system administration practice that allows decoupling the physical organization of the hardware from its logical representation?

Options:

|  | Application Virtualization |
| --- | --- |
|  | Network Virtualization |
|  | Storage virtualization |
|  | Operating System Virtualization |

Which of the following is correct flow of VM provisioning process steps?

Options:

|  | Start the server->Load OS and Appliances->Customize and Configure->Install Patches |
| --- | --- |
|  | Load OS and Appliances->Install Patches->Customize and Configure->Start the server |
|  | Load OS and Appliances->Customize and Configure->Install Patches->Start the server |
|  | Load OS and Appliances->Customize and Configure->Start the server->Install Patches |

Which type of hypervisor runs on top of an operating system to provide resources to the virtual machines?

Options:

|  | Type 0 |
| --- | --- |
|  | Type 1 |
|  | Type 2 |
|  | Type 3 |

Which of the following virtualization has main benefits as user mobility, portability, and easy management of software installation, updates, and patches?

Options:

|  | Application virtualization |
| --- | --- |
|  | Network virtualization |
|  | Desktop virtualization |
|  | Storage virtualization |

Which of the following virrtualization has performance issues due to binary translation?

Options:

|  | para virtualization |
| --- | --- |
|  | Hardware-assisted full virtualization |
|  | IoT assisted full virtualization |
|  | Software assisted full virtualization |

Which of the following is platform virtualization approach that enables efficient full virtualization using help from hardware capabilities, primarily from the host processors?

Options:

|  | IoT assisted full virtualization |
| --- | --- |
|  | Software assisted full virtualization |
|  | Hardware-assisted full virtualization |
|  | OS full virtualization |

Which of the following virtualization is an operating system running on a Type 1 VM?

Options:

|  | desktop virtualization |
| --- | --- |
|  | partial virtualization |
|  | full virtualization |
|  | para virtaulization |

Which of the following virtualization technique provides an abstract execution environment in terms of computer hardware on top of which a guest operating system can be run?

Options:

|  | Desktop Virtualization |
| --- | --- |
|  | OS virtualization |
|  | Hardware-level virtualization |
|  | application virtualization |

Which of the following is not a part of Virtual Machine life cycle?

Options:

|  | Release VMs |
| --- | --- |
|  | IT Service Request |
|  | Check Inventory |
|  | VM Provision |

Which of the following is benefit of Single-tenancy?

Options:

|  | Maintenance |
| --- | --- |
|  | Dependability |
|  | Setup/Management |
|  | Cost |