

B.Tech. DEGREE EXAMINATION, NOVEMBER 2023

Sixth Semester

18ECE335T – INTRODUCTION TO VIRTUAL COMPUTING*(For the candidates admitted from the academic year 2020-2021 to 2021-2022)***Note:**

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
- (ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Marks BL CO PO

Answer **ALL** Questions

1. _____ networks are formed for distributed file sharing and content delivery applications
(A) P2P Networks (B) MPP
(C) Grid (D) Cluster
1 1 1 1
2. The unit GE refers to _____ Ethernet bandwidth
(A) 2Gbps (B) 1Gbps
(C) 1Kbps (D) 1Kbps
1 1 1 1
3. In a _____ cluster, the nodes are not attached to peripherals
(A) Compact (B) Slack
(C) Exposed (D) Enclosed
1 2 1 1
4. _____ is homogeneously configured with the same type of computer nodes and managed by a single administrated group like a front end host.
(A) Virtual (B) Slack
(C) Enterprise (D) Dedicated
1 2 1 1
5. Which of the following provide system resource access to virtual machines?
(A) VMM (B) VMN
(C) VNM (D) VMC
1 2 2 5
6. An operating system running on a type _____ VM is full virtualization.
(A) 1 (B) A
(C) 2 (D) B
1 1 2 5
7. Xen is based on _____ and its security level is _____.
(A) Windows XP, C2 (B) Linux, C2
(C) Windows XP, C1 (D) Linux, C1
1 2 2 5
8. _____ instructions do not control hardware or threaten the security of the system
(A) Masked (B) Branched
(C) Non Critical (D) Critical
1 2 2 5

9. Which of the following architectural standards is working with cloud computing industry? 1 1 3 1
 (A) Web application frameworks (B) Standardized web services
 (C) Service oriented architecture (D) Coarse grain architecture
10. A _____ is built over the internet and can be accessed by any user who has paid for the service. 1 2 3 1
 (A) Public Cloud (B) Private Cloud
 (C) Hybrid Cloud (D) Cluster Cloud
11. _____ have resulted from the need to use multiple clouds simultaneously or in sequence. 1 2 3 3
 (A) API (B) Cloud Mashups
 (C) VPN (D) VMM
12. Declarative IP-level topology and elastic IP applied in 1 2 3 3
 (A) AWS (B) Microsoft Azure
 (C) GAE (D) Framework
13. _____ services tend to use a small number of operations with relatively large and complex messages. 1 2 4 1
 (A) XMC (B) Platform Neutral
 (C) Granularity (D) Network Orientation
14. _____ provides a standard packing structure for transmission of XML documents. 1 1 4 1
 (A) SOAP (B) SMTP
 (C) VDP (D) HTTP
15. SOAP messages are encoded using 1 2 4 5
 (A) UML (B) XML
 (C) AS-XML (D) XLM
16. _____ are tools that enable interactive, web-based science, education and collaboration 1 2 4 1
 (A) Social Gateways (B) Gates
 (C) Science Gateways (D) Ports
17. _____ is a major cloud in Amazon 1 1 5 1
 (A) VO Table (B) Simple Table
 (C) Simple DB (D) Big Table
18. To read a file in HDFS, a user sends an _____ request to the name node to get the location of file blocks. 1 1 5 5
 (A) Create (B) Delete
 (C) Open (D) Write
19. To write a file in HDFS, a user sends a _____ request to the name node to create a new file in the file system name space 1 1 5 1
 (A) Write (B) Create
 (C) Close (D) Open

20. Iterative Map Reduce programming model is used in
 (A) Apache Hadoop (B) Twister
 (C) Microsoft Dryad (D) Google Map Reduce

1 2 5 5

PART – B (5 × 4 = 20 Marks)

Answer ANY FIVE Questions

21. Discuss the various degrees of parallelism.

Marks BL CO PO
4 2 1 1

22. State the advantages of OS extensions.

4 2 2 5

23. What are hybrid clouds?

4 2 3 3

24. Explain the three categories of information in registers.

4 2 4 1

25. Mention the various cloud platform capabilities.

4 2 5 5

26. Discuss the various issues to fulfill reliability requirements of the file system considered by Hadoop.

4 2 5 1

27. Elaborate on instruction set architecture level.

4 3 5 2

PART – C (5 × 12 = 60 Marks)

Answer ALL Questions

28. a. Illustrate the various design objectives of computer cluster.

Marks BL CO PO
12 3 1 1

(OR)

- b. Demonstrate the implementation of virtual machines and virtualization middleware.

12 3 1 1

29. a. Compare physical versus virtual clusters and discuss the concept of a virtual cluster based on application partitioning.

12 2 2 5

(OR)

- b. Explain in detail about I/O virtualization.

12 2 2 5

30. a. Outline public, private and hybrid clouds by functional architecture and connectivity of representative clouds.

12 3 3 3

(OR)

- b. Illustrate specific design considerations for data-centre inter connection networks.

12 3 3 1

31. a. Discuss on semantic grid related concepts and technologies with a functional block diagram.

12 2 4 1

(OR)

- b. Describe work flow concepts and work flow execution engine.

12 2 4 1

32. a. List the various steps in map reduce actual data and control flow.

12 1 5 5

(OR)

- b. Explain open Nebula architecture and describe its main components.

12 1 5 5

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