Reg. No.															

B.Tech. DEGREE EXAMINATION, MAY 2024

Sixth Semester

18ECE335T – INTRODUCTION TO VIRTUAL COMPUTING

(For the candidates admitted from the academic year 2018-2019 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. The _____is often a collection of homogeneous compute nodes that are physically connected in close range to one another. | 1 | 2 | 1 | 1
   (A) MPP (B) Cluster
   (C) P2P networks (D) Grid

2. In _____all processors are either tightly coupled with centralized shared memory. | 1 | 1 | 1 | 1
   (A) Cloud computing (B) Distributed computing
   (C) Parallel computing (D) Centralized computing

3. In an _____cluster, the communication paths among the nodes are exposed to the outside world. | 1 | 2 | 1 | 1
   (A) Exposed (B) Enclosed
   (C) Dedicated (D) Enterprise

4. _____failures cannot be corrected by rebooking. | 1 | 1 | 1 | 5
   (A) Transient (B) Partial
   (C) Permanent (D) Unplanned failures

5. In virtual implementation, the virtualization layer is known as | 1 | 1 | 2 | 5
   (A) Hypervisor (B) Virtual machine
   (C) Supervisor (D) Guest OS

6. _____provides a feasible solution for these hardware level virtualization issues. | 1 | 2 | 2 | 5
   (A) Para virtualization (B) OS-level virtualization
   (C) Software virtualization (D) CUDA virtualization

7. _____is emerging to mix the fat CPU core and thin GPU cores on the same chip. | 1 | 2 | 2 | 5
   (A) Dynamic heterogeneity (B) Static heterogeneity
   (C) Virtual heterogeneity (D) Dynamic heterogeneity

8. _____controls the execution, inspection and terminating of VM instances on the host where it runs. 1 2 2 5
   (A) Local manager (B) Group manager
   (C) Instance manager (D) Cloud manager

9. Application and services that run on a distributed network using virtualized resources is known as 1 2 3 1
   (A) Parallel computing (B) Soft computing
   (C) Distributed computing (D) Cloud computing

10. Which of the following is not a major design goals of a cloud computing platform? 1 1 3 1
   (A) Scalability (B) Latency
   (C) Virtualization (D) Reliability

11. Fixed topology to accommodate three-tier web.app structure is available 1 3 3 3
   (A) Microsoft (B) Microsoft azure
   (C) GAE (D) AWS

12. In which of the following service models the hardware is virtualized in the cloud? 1 2 3 1
   (A) Naas (B) Paas
   (C) Caas (D) Iaas

13. A SOAP message consist of a root element called _____ 1 1 4 1
   (A) Header (B) Envelope
   (C) Body (D) Data

14. _____describes the interface, a set of operations supported by a web service in a standard format. 1 1 4 1
   (A) WSDL (B) UDDI
   (C) SOAP (D) XML

15. GSR is abbreviated as 1 2 4 5
   (A) Grid service rate (B) Grid state reference
   (C) Grid service reference (D) Grid service ratio

16. _____contain information about the details of how to invoke the offered services. 1 1 4 5
   (A) Green pages (B) Yellow pages
   (C) White pages (D) Orange pages

17. The basic storage concept in clouds is _____for azure. 1 1 5 1
   (A) S1 (B) Blobs
   (C) Blocks (D) S3

18. The block size of _____ was chosen in the design of GFS. 1 1 5 1
   (A) 16 kB (B) 64 kB
   (C) 64 MB (D) 16 MB

19.	In directed a cyclic graph_____are computation engines and _____are communication channels. (A) Pair, keys (B) Keys, pair (C) Vertices, edges (D) Edges, vertices	1	2	5	5
20.	HDFS data handling is used in (A) Google mapreduce (B) Apache Hadoop (C) Microsoft dryad (D) Twister	1	2	5	5

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	State the design objectives of HPC and HTC system.	4	2	1	1
22.	Draw the architecture of a computer system before and after virtualization.	4	2	2	5
23.	Mention the features of Google APP engine.	4	2	3	1
24.	Discuss the properties of service oriented architecture.	4	3	4	1
25.	Compare classic map reduce and iterative map reduce.	4	3	5	5
26.	Classify computer clusters based on application demand.	4	3	1	1
27.	Elaborate on design objectives for cloud computing.	4	2	3	3

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Illustrate the various design principles of computer cluster.	12	3	1	1
	(OR)				
b.	Demonstrate the various system models for distributed and cloud computing.	12	3	1	1
29. a.	Discuss on Xen architecture with a functional block diagram.	12	2	2	5
	(OR)				
b.	Explain in detail about CPU virtualization and hardware-assisted CPU virtualization.	12	2	2	5
30. a.	Describe the cloud service models at different service levels.	12	2	3	1
	(OR)				
b.	Discuss about data centre networking structure for the cloud to access the internet.	12	2	3	1

31. a.	Elaborate on REST architecture with their architectural elements and REST operations.	12	2	4	1
	(OR)				
b.	Describe semantic grid architecture and explain semantic web and grid.	12	2	4	1
32. a.	Draw the map reduce framework and explain map reduce logical data flow.	12	1	5	5
	(OR)				
b.	Draw and explain the architecture of Google file system and discuss data mutation sequence in Google file system.	12	1	5	5

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