

Name: _____

Roll no.: _____

B. Tech. (ICT): Semester VII / MTech in CSE, Semester III

Course: 'Cloud Computing'

End-Semester Exam (Marks: 30, Weight: 30%) / for MTech (Weight: 50%)

November 30, 2019, Duration: One hour thirty minutes (Ninety Minutes)

Instructions

- Write all your answers in the box given on these papers only and you should return question paper at the end of your exam. You can use any available space for rough work, if required.
- Some questions have multiple correct answers and you **MUST** provide all correct answers.
- Your answers should be precise and not vague

| Answers | Q - I [15] | Q - II [10] | Q - III [5] | Total Marks [30] |
|--------------|---------------|----------------|----------------|---------------------|
| Correct | | | | |
| Marks scored | | | | |

[Q.1] Write answers of this question on page number

[15]

1. Which is/are true regarding cloud computing?

- (a) It does not provide ubiquitous access
- (b) It provides on-demand network access
- (c) Resources can be released with no management effort
- (d) None of these

2. Which are essential characteristics of cloud computing?

- (a) On-demand self service
- (b) Resource pooling
- (c) Rapid elasticity
- (d) None of these

3. Cloud computing is a distributed computing model.

- (a) True
- (b) False

4. Amazon Web Services is an example of

- (a) SaaS
- (b) PaaS
- (c) IaaS
- (d) None of these

5. Email service on cloud is an example of

- (a) SaaS (b) PaaS (c) None of these

6. Virtual machine can't be migrated from one host to another host.

- (a) True
- (b) False

7. Customer's computer does require the processing power or hard disk space demanded while running any cloud application.

- (a) True (b) False

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8. What is the disadvantage of cloud computing?

- (a) It requires continuous internet connection.
- (b) It does not support group collaboration.
- (c) It provides limited storage.
- (d) None of these.

9. Virtual machines are example of

- (a) SaaS (b) PaaS (c) IaaS (d) None of these

10. Adding more resources to a single computation unit is known as

- (a) Vertical scale up (b) Horizontal scale out (c) None of these

11. Google docs is an example of

- (a) SaaS (b) PaaS (c) IaaS

12. Google App Engine is an example of

- (a) SaaS (b) PaaS (c) IaaS

13. Normally, each client server application is load balanced.

- (a) True (b) False (c) Can't say

14. Which among the following is/are IaaS?

- (a) Load balancer (b) Data storage (c) CRM (d) Office suites

15. SaaS is useful in case of applications where extremely fast processing of real time data is needed.

- (a) True (b) False

16. Which of these is/are managed by the user in PaaS?

- (a) Data (b) Application (c) Runtime (d) All of these

17. Metrics used for monitoring and auditing of SLA guarantees is/are

- (a) Throughput
- (b) Availability
- (c) Reliability
- (d) None of these

18. When load decreases, VM management can be done by

- (a) Shutdown unused nodes (b) Live migration of VMs to more utilized nodes (c) None of these

19. VM image should as small as possible to reduce network latency.

- (a) True (b) False

20. Which of the following is/are the performance metrics for resource management?

- (a) Control overhead (b) Ease of deployment (c) Delay (d) None of these

21. In mobile cloud computing all computations are done in cloud data centers.

- (a) True (b) False

22. The key challenges for Mobile Cloud Computing are

- (a) Low bandwidth
- (b) Service availability
- (c) Heterogeneity
- (d) None of these

23. Security responsibilities of a SaaS cloud provider is typically upto which level?

- a) Hypervisor
- b) Application
- c) Solution Stack
- d) Operating System

24. Security responsibilities of a IaaS cloud provider is typically upto which level?

- a) Hypervisor
- b) Application
- c) Storage
- d) Operating System

25. Two CPU intensive VMs with isolated CPU resources on the same physical server will incur performance interference with each other. Is this statement True or False?

- (a) True (b) False

Note: Write answers of question – 1 here only and write all correct options:

| Question | Answers |
|----------|---------|
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Q.2 Write precise and brief answers for the following

1. Researcher from the applied science wants to simulate a DNA analysis only once on a computer system. Simulation is taking 7 days on a system with 120 cores and 64GB ram, 1 Gbps network speed. The user wants result as fast as possible. Which architecture you are suggesting: Cloud computing, High performance Computing or Grid Computing?

2. Researcher from the applied science wants to simulate a DNA analysis repeatedly on a computer system. Which architecture you are suggesting: Cloud computing, High performance Computing or Grid Computing?

3. The research agency wants to develop a satellite communication system which responses very quickly and as much as possible. Which architecture you are suggesting: On Premise Resource with virtualization OR On Premise Resource without virtualization.

4. In your organization, three system engineers have set up private cloud which consist of 120 cores and 100 TB of storage. Organization has decided to reduce number of system engineers from 3 to 1 by shifting 2 engineers to another site location. Management knows that administration of current workload cannot be managed by 1 system engineer and at the same time they do not want to sell out existing setup. Which cloud model will help them to solve above problem? Public or Hybrid cloud.

5. What is the basic or core element to support resource management in a private, public and hybrid cloud?

6. What is down time duration per month (30 Days) if uptime SLA (Service Level Agreement) is 99.50?

7. When IT resources hosted by Virtual servers on a public cloud impose processing requirements that exceed the virtual server's capacity, the performance and reliability of the hosted IT resources and the virtual server itself may be compromised. What action or feature of cloud computing should be initiated by the system admin?

8. If runtime workload is improperly distributed across both virtual servers and their physical hosts, then some virtual servers become over-utilized, while others are underutilized or running idle. What the cloud provider needs to do to balance in above scenario?

9. Why Hybrid Clouds are so important?

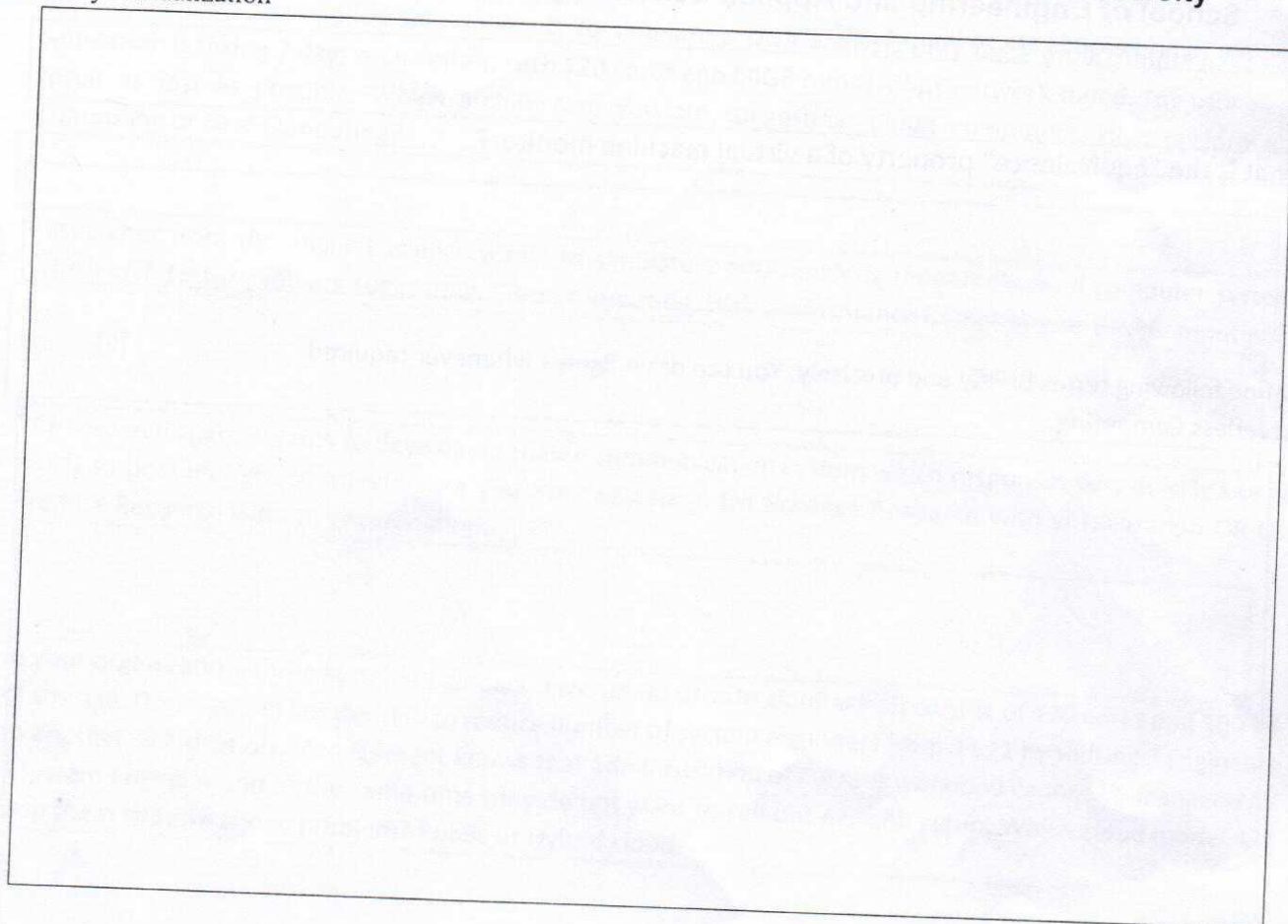
10. What is the "equivalence" property of a virtual machine monitor?

Q.3 Define following terms briefly and precisely. You can draw figures whenever required.

[5]

3.1 Serverless Computing

3.2 Scheduling algorithms used Virtual Machine Monitors?



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