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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech (Integrated)

SEM: V - THEORY EXAMINATION - (2023 - 2024)

Subject: Cloud Virtualization

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

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1. Attempt all parts:-

- 1-a. Choose the name of Operating System that supports operating system virtualization.(CO1) 1
- (a) Windows NT
 - (b) Sun Solaris
 - (c) Windows XP
 - (d) Compliance
- 1-b. _____refers to the use of a remote computer from a local computer where the actual computer user is located.(CO1) 1
- (a) Virtual machine
 - (b) Virtual computing
 - (c) Virtual cloud
 - (d) Virtual OS
- 1-c. Point out the wrong statement.(CO2) 1
- (a) Amazon Machine Instances are sized at various levels and rented on a computing/hour basis
 - (b) The metrics obtained by CloudWatch may be used to enable a feature called Auto Scaling
 - (c) A number of tools are used to support EC2 services
 - (d) None of the mentioned

- 1-d. Choose the application of cloud computing.(CO2) 1
- (a) Adobe
 - (b) Paypal
 - (c) Google G Suite
 - (d) All of the above
- 1-e. Port numberis use for HTTP traffic in AWS.(CO3) 1
- (a) 80
 - (b) 120
 - (c) 502
 - (d) 443
- 1-f. For Authentication we use_____ in AWS.(CO3) 1
- (a) ID & Password
 - (b) Access key
 - (c) Session Key
 - (d) All of the above
- 1-g. It is a type of storage that can be mounted to EC2 instance(s). (CO4) 1
- (a) ELB
 - (b) EBS
 - (c) RDS
 - (d) EMR
- 1-h. It is an unstructured and object type of storage: (CO4) 1
- (a) EFS
 - (b) EBS
 - (c) S3
 - (d) RDS
- 1-i. Cloud Services have a___ relationship with their customers. (CO5) 1
- (a) One to Many
 - (b) Many to Many
 - (c) One to one
 - (d) Many to one
- 1-j. You are responsible for deploying a critical application to AWS. It is required to ensure that the controls set for this application meet PCI compliance. Also, there is a need to monitor web application logs to identify any malicious activity. Which of the following services can be used to fulfill this requirement? (CO5) 1
- (a) Amazon CloudWatch Logs
 - (b) Amazon VPC Flow Logs
 - (c) Amazon AWS Config
 - (d) None of the abobe

2. Attempt all parts:-
- 2.a. Enlist three products available as server virtualization. (CO1) 2
 - 2.b. Briefly explain Google App Engine (GAE). (CO2) 2
 - 2.c. Concise statefull firewall. (CO3) 2
 - 2.d. Define 'Write Capacity Unit' with suitable example. (CO4) 2
 - 2.e. Define Continuous Integration. (CO5) 2

SECTION-B

30

3. Answer any five of the following:-

- 3-a. Explain level of virtualization and enlist the benefits of virtualization. (CO1) 6
- 3-b. Differentiate para virtualization with full virtualization. (CO1) 6
- 3-c. Briefly explain about layered Cloud Architecture. (CO2) 6
- 3-d. Define Fault tolerance and Graceful Degradation in Data Center Interconnection Networks. (CO2) 6
- 3.e. Describe SDK in detail. (CO3) 6
- 3.f. Define Versioning with a suitable example and discuss the various benefits of using Versioning. (CO4) 6
- 3.g. Describe Customer Application RPO and how it helps in high availability. (CO5) 6

SECTION-C

50

4. Answer any one of the following:-

- 4-a. Explain Service Partitioning with a suitable example and proper diagram. (CO1) 10
- 4-b. Discuss name of tools (at least 5) used in virtualization Process.(CO1) 10

5. Answer any one of the following:-

- 5-a. Draw a layered diagram to relate the construction of IaaS, PaaS, and SaaS clouds from bare machine hardware to the users applications. Briefly list the representative cloud service offerings at each cloud layer from the major cloud providers that you know of. (CO2) 10
- 5-b. Explain Inter-cloud Resource Management in cloud computing. (CO2) 10

6. Answer any one of the following:-

- 6-a. Describe features of IAM in creating role based ACL with suitable diagram. (CO3) 10
- 6-b. Explain the concept of subnetting and allocating IP address in VPC. (CO3) 10

7. Answer any one of the following:-

- 7-a. Write short notes on the storing data in (a) EFS (b) EBS (c) S3. (CO4) 10
- 7-b. Write a short note on managed and unmanaged services for Relational Databases. (CO4) . 10

8. Answer any one of the following:-

- 8-a. Explain the relation between AWS Elastic Disaster Recovery and Cloud Endure Disaster Recovery. (CO5) 10

8-b. Describe function of launch configuration in Amazon EC2 Auto Scaling. (CO5)

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