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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B. Tech.

SEM: III - THEORY EXAMINATION (2021 - 2022)

Subject: Introduction to Cloud Computing

Time: 03:00 Hours

Max. Marks: 100

General Instructions:

1. All questions are compulsory. It comprises of three Sections A, B and C.
 - Section A - Question No- 1 is objective type question carrying 1 mark each & Question No- 2 is very short type questions carrying 2 marks each.
 - Section B - Question No- 3 is Long answer type - I questions carrying 6 marks each.
 - Section C - Question No- 4 to 8 are Long answer type - II questions carrying 10 marks each.
 - 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. | Which is/are true regarding cloud computing? (CO1) | 1 |
| | <ol style="list-style-type: none"> 1. It does not provide ubiquitous access 2. It provides on-demand network access 3. Resources can not be used with no management effort 4. None of these | |
| 1-b. | Which of the following a company must consider before moving towards cloud computing? (CO1) | 1 |
| | <ol style="list-style-type: none"> 1. Employee Satisfaction 2. Potential cost reduction 3. Information Sensitivity 4. All of these | |
| 1-c. | What is virtualized in full virtualization? (CO2) | 1 |
| | <ol style="list-style-type: none"> 1. Processor 2. Application 3. Desktop 4. Hardware | |
| 1-d. | Communication between services is done widely using which protocol? (CO2) | 1 |
| | <ol style="list-style-type: none"> 1. REST 2. SOAP 3. RESTful 4. None of the above | |
| 1-e. | Point out the wrong statement. (CO3) | 1 |
| | <ol style="list-style-type: none"> 1. The customer takes no responsibility for maintaining the hardware, the software, or the development of the applications 2. The vendor is responsible for all the operational aspects of the service 3. Google's App Engine platform is IaaS offering 4. None of the mentioned | |

- 1-f. XaaS – Anything as a service is classified into _____. (CO3) 1
1. 3 types
 2. 4 types
 3. 5 types
 4. 6 types
- 1-g. The Focce.com and windows Azure are examples of which of the following? (CO4) 1
1. IaaS
 2. PaaS
 3. SaaS
 4. Both A & B
- 1-h. Managed IT services are based on the concept of which one of the following? (CO4) 1
1. Virtualization
 2. Utility Computing
 3. Grid Computing
 4. SOA
- 1-i. What best describes the payment structure of most Serverless cloud providers? (CO5) 1
1. Pay per use
 2. One time flat service fee
 3. Multi-tiered monthly service subscription plans
 4. Fixed hourly rate
- 1-j. Which OpenStack component provides identity services? (CO5) 1
1. Trove
 2. Ceilometer
 3. Dragonflow
 4. Keystone

2. Attempt all parts:-

- 2-a. Define Compute Optimized EC2 instances. (CO1) 2
- 2-b. What are the characteristics of Virtualization? (CO2) 2
- 2-c. Write a note on multi-tenancy. (CO3) 2
- 2-d. Elaborate Cloud Security with examples. (CO4) 2
- 2-e. Discuss a case study based on Cloud Computing. (CO5) 2

SECTION B

30

3. Answer any five of the following:-

- 3-a. What do you understand by Cloud Computing? Explain its characteristics. (CO1) 6
- 3-b. What is the meaning of “pay per use” and “on demand provisioning” in cloud computing? (CO1) 6
- 3-c. Write Short Notes on: (i) Virtual Machine Manager (VMM) (ii) Virtual Server Instance (VSI) (CO2) 6
- 3-d. Discuss the similarities and differences between SOA and Cloud Computing. (CO2) 6
- 3-e. Draw the diagram of NIST reference architecture and discuss its key elements. (CO3) 6
- 3-f. How authentication is controlled in the IAM service? (CO4) 6
- 3-g. What are the most important advantages of cloud technologies for social networking application? (CO5) 6

SECTION C

50

4. Answer any one of the following:-
- 4-a. Differentiate between:(i) Distributed and Parallel computing (ii) Cloud computing and Traditional Computing (CO1) 10
- 4-b. Write short notes on: (i) Utility Computing (ii) Cluster Computing (CO1) 10
5. Answer any one of the following:-
- 5-a. What is a Hypervisor? Explain in detail with necessary illustrations. (CO2) 10
- 5-b. "Virtualization is the center of cloud resource utilization", explain how and justify your answer. (CO2) 10
6. Answer any one of the following:-
- 6-a. What do you understand by cloud storage? Write its features, advantages and types in detail. (CO3) 10
- 6-b. Write Short Notes on: (i) Cloud Service Models (ii) Cloud Deployment Models (CO3) 10
7. Answer any one of the following:-
- 7-a. List the responsibilities of Cloud Customer in security policy. (CO4) 10
- 7-b. What are the Components of Amazon VPC? What are the Steps to build a Custom VPC? (CO4) 10
8. Answer any one of the following:-
- 8-a. What is Cloud Federation? Explain the properties of Federated Cloud. (CO5) 10
- 8-b. Explain the three components that make modular architecture of OpenStack? (CO5) 10