CS/B.Tech/CSE/Odd/Sem-7th/CS-704B/2015-16

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CS-704B

CLOUD COMPUTING

Time Allotted: 3 Hours   Full Marks: 70

The questions are of equal value.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.

GROUP A
(Multiple Choice Type Questions)

1. Answer *all* questions.   10 × 1 = 10

(i) Which of the following factors should a company consider before implementing cloud computing systems?

(A) user satisfaction   (B) potential cost reduction
(C) information sensitivity   (D) all of these

(ii) Which of the following is perceived as the number one concern about cloud computing?

(A) complex accessibility   (B) too expensive
(C) high latency   (D) information security

(iii) Which of the following techniques is vital for creating cloud computing environments?

(A) virtualization   (B) personalization
(C) localization   (D) all of these

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(iv) Which of the following is not a cloud computing service/solution?

(A) Amazon EC2   (B) Google GAE
(C) IBM Deep Blue   (D) Microsoft Azure

(v) Which is the correct combination of cloud service provider and cloud-based service?

(A) Google and AWS   (B) Intuit and Quick Books Online
(C) IBM and Azure   (D) Microsoft and GWT

(vi) Geographic distribution of data across a cloud service provider's network is perceived as a major issue for many organizations because it:

(A) makes data recovery harder
(B) adds more latency
(C) complicates regulatory compliance
(D) raises security concerns

(vii) Which of the following can cloud computing replace?

(A) corporate data centers   (B) expensive computer hardware
(C) costly software upgrade   (D) all of these

(viii) Amazon EC2 is which type of cloud computing model?

(A) compliance as a service   (B) infrastructure as a service
(C) platform as a service   (D) software as a service

(ix) Which of the following widely used services is built on cloud-computing technology?

(A) Gmail   (B) Twitter
(C) YouTube   (D) all of these

(x) Which of the following programming language did Google include for development around App Engine?

(A) C++   (B) Java
(C) SQL   (D) Visual Basic

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GROUP B
(Short Answer Type Questions)

Answer any *three* questions.   3×5 = 15

2. Clean-and-Green Energy, a power generation and distribution company, has   2.5+2.5
   decided to deploy cloud-based solutions for two crucial customer-facing
   systems, namely,
   - (i) Real-time Load Management
   - (ii) Online Consumer Billing

   Discuss, in brief, the advantages / disadvantages of both systems with cloud
   environment.

3. Explain, in brief, what 'multi-tenancy' is in the context of SaaS. Mention   2+3
   three significant characteristics of a typical SaaS solution.

4. (a) What is virtualization?   1
   (b) Compare Process-level and System-level virtualization with respect to   4
   technique and virtualization model.

5. Describe Cloud Security Model as defined by Cloud Security Alliance.   5

6. (a) What are the benefits of Google AdWords to the advertisers? What is 'CPC'   2
   in context of AdWords?
   (b) What are the functions of Google Analytics? How does it work for the user?   3

GROUP C
(Long Answer Type Questions)

Answer any *three* questions.   3×15 = 45

7. With respect to the NIST Reference Model of Cloud Computing, explain the   6+4+5
   following with suitable schematic and examples:
   - (i) Essential Characteristics
   - (ii) Service Models
   - (iii) Deployment Models

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8. (a) Discuss three main advantages and two major disadvantages of cloud   6+4
   computing with suitable examples.
   (b) Describe key parameters used in a typical Cloud Service Level Agreement.   5

9. Explain the concepts of IaaS, PaaS, and SaaS. Use suitable examples and/or   6+9
   appropriate schematic diagrams to help establish your understanding.

10. (a) Virtualization in the context of IaaS.   2
    (b) Benefits of Virtualization.   3
    (c) Differences between 'full virtualization' and 'Para-virtualization'.   7
    (d) Amazon Machine Images (AMI) use both types of virtualization, namely,   3
    Hardware Virtual Machine (HVM) as well as Para-virtualization (PV).
    Mention the respective situations in which AMI's can use PV or HVM.

11. (a) Describe key features of Amazon Elastic Component Cloud (EC2).   3
    (b) What are the differences between Amazon Simple Storage Service (S3) and   3
    Elastic Block Storage (EBS)?
    (c) What is Google APIs? Mention broad categories of Google APIs with   5
    suitable examples. Name any two programming language environments that
    are compatible with Google API.
    (d) What does Google App Engine do? Mention any two services provided by   4
    it.

12. Write short notes on any *three* of the following: 3×5
    - (a) Amazon AWS
    - (b) Cloud Cube Model of Cloud Computing
    - (c) Google GWT
    - (d) Microsoft SQL Azure
    - (e) Virtual Machine Monitor (VMM).

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