Student's Copy

Professional Course Examination (Odd), 2023

(5th Semester)

BACHELOR OF COMPUTER APPLICATIONS

Course No. : BCA/5/EC/28 (a)

(**Cloud Computing**)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(**PART : A—OBJECTIVE**)

(*Marks* : 25)

SECTION—I

(*Marks* : 15)

I. Tick (✓) the correct answer in the brackets provided :   1×10=10

1. The primary business drivers that exposed the need for cloud computing include

(a) capacity planning   ( )

(b) cost reduction   ( )

(c) organization agility   ( )

(d) All of the above   ( )

2. A primary technology innovation that influenced and inspired key distinguishing features and aspects does not include

    (a) grid computing   ( )

    (b) parallel computing ( )

    (c) virtualization   ( )

    (d) clustering   ( )

3. A ____ is the person or organization responsible for administering a cloud-based IT resource (including cloud services).

    (a) cloud provider   ( )

    (b) cloud consumer   ( )

    (c) cloud service owner   ( )

    (d) cloud resource administrator ( )

4. The ____ delivery model represents a self-contained IT environment comprised of infrastructure-centric IT resources that can be accessed and managed via cloud service-based interfaces and tools.

    (a) IaaS   ( )   (b) PaaS   ( )

    (c) SaaS   ( )   (d) VaaS   ( )

5. A ____ is a device that is connected to multiple networks through which it forwards packets.

    (a) router ( )   (b) switch ( )

    (c) hub   ( )   (d) modem   ( )

6. ____ is the amount of time it takes a packet to travel from one data node to another.

    (a) Speed   ( )   (b) Latency   ( )

    (c) Seek time ( )   (d) Turnaround time ( )

2

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7. _____ is the characteristic of not having been altered by an unauthorized party.

(a) Policy ( )

(b) Confidentiality ( )

(c) Authenticity ( )

(d) Integrity ( )

8. _____ are associated with measuring and assessing insecurity, or the lack of security.

(a) Threats ( )

(b) Vulnerabilities ( )

(c) Risks ( )

(d) All of the above ( )

9. The primary concern related to cloud storage is the

(a) security ( )

(b) integrity ( )

(c) confidentiality ( )

(d) All of the above ( )

10. According to different storage levels, there are three kinds of interfaces implemented. Which of the following is **not** one of them?

(a) Network storage interfaces ( )

(b) Cloud storage interfaces ( )

(c) Database storage interfaces ( )

(d) Object storage interfaces ( )

II. State whether the following statements are *True* (T) or Fa
   Tick (✓) mark in the brackets provided :

1. Vertical scaling is scaling out and scaling in.

2. The PaaS delivery model is typically used to mal
   service widely available to a range of cloud comp

3. Cloud consumers and cloud providers typically
   communicate, which is based on a decentraliz
   management model and is not controlled by any c

4. It is important for cloud provider, subseq
   understanding of the potential security-relate
   given cloud environment, to perform a corresp
   the identified risk.

5. The ready-made environment mechanism is a
   PaaS cloud delivery model that represents a

SECTION—II

(*Marks* : 10)

III. Answer the following questions :

1. (a) What is clustering?

   OR

   (b) What is IT resource?

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4

II. State whether the following statements are *True* (T) or *False* (F) by putting a Tick (✓) mark in the brackets provided :

1×5=5

1. Vertical scaling is scaling out and scaling in.

(T / F)

2. The PaaS delivery model is typically used to make a reusable cloud service widely available to a range of cloud computers.

(T / F)

3. Cloud consumers and cloud providers typically use the Internet to communicate, which is based on a decentralized provisioning and management model and is not controlled by any centralized entities.

(T / F)

4. It is important for cloud provider, subsequent to gaining an understanding of the potential security-related issues specific to a given cloud environment, to perform a corresponding assessment of the identified risk.

(T / F)

5. The ready-made environment mechanism is a defining component of PaaS cloud delivery model that represents a pre-defined.

(T / F)

SECTION—II

(*Marks* : 10)

III. Answer the following questions :

2×5=10

1. (a) What is clustering?

OR

(b) What is IT resource?

2. (a) Who is cloud resource administrator?

OR

(b) What is trust boundary?

3. (a) Mention two differences between On-Premise IT Resources and Cloud-based IT Resources.

OR

(b) What are SAN and NAS?

4. (a) What is the objective of DOS attack?

OR

(b) What is traffic eavesdropping?

5. (a) What is container?

OR

(b) What are the four logical units of cloud storage level?

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

IV. Answer the following questions :   10×5=50

1. (a) What is scaling? Differentiate between horizontal scaling and vertical scaling.   2+3=5

(b) What is capacity planning? What are the different capacity plannings existing?   2+3=5

OR

Elaborate the goals and benefits of cloud computing.   10

2. (a) What is cloud computing? What are the different characteristics of cloud computing? 4+6=10

(b) Explain community and public deployment models of cloud computing with suitable diagram. 10

3. (a) What is connectionless packet switching? 4

(b) Explain generic view of the Internet reference model and protocol stack. 6

Explain operating system-based and hardware-based virtualization with suitable diagram. 10

•

4. (a) What is treat agent? Explain the following terms : 2+(2×4)=10

   (i) Anonymous attacker

   (ii) Malicious service agent

   (iii) Trusted attacker

   (iv) Malicious insider

(b) What is risk management? Define risk assessment, risk treatment and risk control in security of cloud computing. 4+2+2+2=10

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5. (a) Explain Logical Network Perimeter and Virtual Server with details.

5+5=10

OR

(b) What is cloud storage device mechanism? Explain different cloud service customers that utilise different technologies to interface with virtualised cloud storage devices.

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