

- DEC 2024

[07 BENG – 3146]

III/IV B.Tech. DEGREE EXAMINATION.

First Semester

Computer Science and Engineering

CLOUD COMPUTING

(Effective from the admitted batch of 2022–2023)

Time : Three hours

Maximum : 70 marks

First Question is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

1.
  - (a) Define Distributed Computing.
  - (b) What is the difference between public and private clouds?
  - (c) List two key characteristics of virtualization.
  - (d) What are the advantages of OS Extension for Virtualization?
  - (e) What is Publish Subscribe Model?
  - (f) Describe storage model.
  - (g) What is Read/write coherence?

[07 BENG - 3146]

III/IV B.Tech. DEGREE EXAMINATION,

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1.
  - (a) Define Distributed Computing.
  - (b) What is the difference between public and private clouds?
  - (c) List two key characteristics of virtualization.
  - (d) What are the advantages of OS Extension for Virtualization?
  - (e) What is Publish Subscribe Model?
  - (f) Describe storage model.
  - (g) What is Read/write coherence?

2. (a) Describe the peer-to-peer computing paradigm and its advantages. (7)
- (b) Compare distributed computing and cluster computing with examples. (7)
3. (a) Write a detailed note on the transition from traditional computing models to modern paradigms like cloud computing. (7)
- (b) Differentiate between Public, Private, and Hybrid clouds. Provide suitable use cases for each. (7)
4. (a) Explain SaaS cloud service model with examples. (7)
- (b) Distinguish between PaaS and IaaS. (7)
5. (a) How does virtualization support at the OS level differ from middleware support for virtualization? (7)
- (b) Discuss the process of virtualization of CPU, memory, and I/O devices. (7)
6. (a) How does Google App Engine (GAE) support application deployment and scaling? Provide a detailed overview. (7)
- (b) Discuss the architecture of Amazon Web Services (AWS) and its key components. (7)

7. (a) What are the three important characteristics of the Unix File System that enabled the extension from local to remote file management? Explain briefly. (7)
- (b) Write short notes on Network File Systems. (7)
8. (a) What challenges are involved in the resource management of virtual machines? (7)
- (b) Explain briefly about Distributed file systems. (7)



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III/IV B.Tech. DEGREE EXAMINATION  
Computer Science and Engineering  
First Semester  
Professional Elective  
**CLOUD COMPUTING**

(Effective from the admitted batch of 2021-2022)

Time : 3 Hours

Max. Marks: 70

*Question No.1 is compulsory.*

*Answer any FOUR from the remaining questions.*

*All questions carry equal marks.*

*Answer all parts of any question at one place.*

1. Answer the following in brief:
  - (a) Define software as a service (SaaS).
  - (b) Define virtual LAN(VLAN) in network virtualization.
  - (c) Define Platform as Service (Paas)
  - (d) Discuss the key benefits of IaaS, including scalability, flexibility.
  - (e) Explain the client server distributed architecture.
  - (f) What are the key principles of cloud governance?
  - (g) What are the unique security challenges?
2.
  - (a) What is the difference between infrastructure as a service (IaaS) and Platform as service (PaaS).
  - (b) What is Database as a Service (DBaaS)? How does it benefit business in terms of scalability and maintenance?
3. What is server virtualization and how does it optimize server resource utilization? Provide two examples of popular server virtualization platforms, the underlying operating system. Provide an example of an application virtualization tool.

( P.T.O. )

4. (a) Discuss the role of APIs (Application programming Interfaces) in enabling collaboration between SaaS and PaaS offerings.  
(b) What security measures are typically implemented in SaaS and PaaS environments to protect user data and applications.
5. Describe different types of servers available in IaaS, such as dedicated servers, virtual private servers (VPS) and Bare - Metal servers. What are their respective use cases and advantages?
6. (a) Discuss server - side scripting languages like PHP, Python, and Ruby, and how they are used in cloud application development.  
(b) Explain the role of client - side programming in web applications, focusing on technologies like HTML, CSS and Java Script.
7. (a) What metrics and key performance indications (KPIs) are crucial for evaluation the success of cloud adoption within an organization?  
(b) What criteria should organization consider when selecting a cloud service provider, including factors like reliability, security, support, and pricing?
8. (a) What is the fundamental concept behind Map Reduce, and how does it enable distributed data processing?  
(b) What are the major security challenges associated with processing and storing big data cloud environments?

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III/IV B.Tech. DEGREE EXAMINATION  
Computer Science and Engineering  
First Semester

Professional Elective - (2)

**CLOUD COMPUTING**

(Effective from the admitted batch of 2020-2021)

Time : 3 hours

Max. Marks : 70

*Question No. 1 is compulsory.*

*Answer any FOUR from the remaining.*

*All questions carry equal marks.*

*Answer all parts of any question at one place.*

- (a) Explain briefly about data base services in cloud.
  - (b) List the pros and cons of virtualization.
  - (c) List some benefits of PaaS solutions.
  - (d) What is load balancing?
  - (e) What is Server-Side programming?
  - (f) What is cloud governance?
  - (g) What is Hadoop?
- 
- (a) Elaborate database services offered in cloud environment.
  - (b) Discuss about the cloud Infrastructure services with an example.

(P.T.O.)

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3. (a) Describe about the desktop virtualization.  
(b) List the reasons why companies should virtualize. Elaborate the reasons.
4. (a) Explore the open SaaS solutions in detail.  
(b) Discuss about some real-world PaaS solutions.
5. (a) Illustrate server types within IaaS.  
(b) Describe cloud based Network Attached Storage (NAS) and their service providers in detail.
6. (a) Describe the Client-Server distributed architecture for cloud.  
(b) Explain about the creating and deploy cloud based applications using Google App Engine.
7. (a) Discuss about the governing and evaluating the cloud business and its impact.  
(b) Discuss about the migrating to the cloud in detail.
8. Write short notes on the following:
  - (a) Big-Data impact on cloud
  - (b) Managing the cloud
  - (c) Securing the cloud



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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science and Engineering

Elective II (A) — CLOUD COMPUTING

(Common with Information Technology)

(Effective from the admitted batch of 2015–2016)

Time : Three hours

Maximum : 70 marks

First Question is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

Answer all parts of any question at one place.

- (a) Give a note on data storage in cloud.
- (b) List out the different types of virtualization.
- (c) Mention the applications of SaaS.
- (d) What are the advantages of load balancing.
- (e) What is cloud application development?

cloud.  
(b) Explain Map Reducing.



- (f) What are the benefits of a cloud governance framework?
- (g) What is big data in the cloud?
2. (a) What is cloud computing? List out various advantages and disadvantages of Cloud Computing?
- (b) Discuss about various services provided in the Cloud Computing?
3. (a) What is Application Virtualization? Give examples of Application Virtualization use?
- (b) Discuss about the server virtualization.
4. (a) Discuss about SaaS.
- (b) Explain the benefits of PaaS.
5. (a) What are the benefits of IaaS.
- (b) Discuss about cloud based data storage and backup services.
6. (a) Mention the challenges of Cloud based application development.
- (b) Discuss about web application framework.

What is cloud governance and why it is important?

What is governing and evaluating the clouds business?

Discuss about map reducing.

List out the pros and cons of big data in the cloud.

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JAN 2023

III/IV B.Tech. DEGREE EXAMINATION.

First Semester

Computer Science and Engineering

Professional Elective (2) — CLOUD COMPUTING

Effective from the admitted batch of 2020-2021)

Time : Three hours

Maximum : 70 marks

Question 1 is compulsory.

Answer any FOUR of the remaining questions.

All questions carry equal marks.

Answer all parts of any question at one place.

- (a) Explain about the benefits of the paradigm shift from local to network-centric data processing and storage.
- (b) Define the hypervisor.
- (c) Define and explain briefly about mashups.
- (d) Define NAS.
- (e) What are Cloud Apps?

... the disadvantages of SaaS?

- (a) Discuss the pros and cons of big data in the cloud.
- (b) Explain Map Reducing.



(b) Discuss the application detailed over

(a) How do

(f) Explain briefly about Cloud evaluation.

(g) What is MapReduce?

2. (a) Explore the Cloud computing delivery deployment models and defining attributes.

(b) Describe three Cloud based solutions for individuals and business.

3. (a) Explain about the memory virtualization in detail.

(b) Elaborate on tools and products available for Virtualization.

4. (a) Discuss about the multitenant nature of Cloud Solutions in detail.

(b) Describe the Service Oriented Architecture in detail.

5. (a) Describe load balancing and their cloud-based solution providers.

(b) Discuss about the Cloud based block storage and database services.

6. (a) Discuss about the Client-Side programming concepts used in cloud.

(b) Discuss about Web Application frameworks in detail.

a) Describe the Disaster recovery and business continuity in the cloud environment.

b) Explain about the issues in securing the cloud.

Write Short Notes on the following :

(a) Traditional Apps vs Cloud based Apps.

(b) Hadoop Architecture.

(c) Migrating to Cloud.

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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science Engineering

Elective - II : (A) CLOUD COMPUTING

Effective from the admitted batch of 2015-2016)

For the academic year 2020-2021 batch only

e : Three hours

Maximum : 70 marks

Question. No. 1 is compulsory.

Answer any FOUR questions from the remaining.

All questions carry equal marks.

Answer all parts of any question at one place.

- (a) Define and discuss cloud computing.
- (b) List three advantages and three disadvantages of cloud computing.
- (c) Describe potential disadvantages of PaaS.
- (d) Define and describe NAS.
- (e) Define and describe collocation.



(a) How does Google App Engine application deployment and Services (AWS) and

- (f) Give the features of windows Azure as a PaaS.
- (g) Give details about OPENSIFT as a cloud computing solution.
2. (a) Explain about the three components of a cloud computing solution.
- (b) Describe three cloud-based solutions for individuals and three cloud-based solutions for businesses.
3. (a) Discuss about different types of virtualization.
- (b) Defend the following statement: Virtualization is not a new concept in computer science.
4. (a) List the advantages and disadvantages of SaaS solutions.
- (b) List SaaS provider for each of the following industries:
  - (i) Sales and management customer relations
  - (ii) Accounting
  - (iii) Income tax filing
  - (iv) Web-based meetings
  - (v) Human resources

- (a) Define and describe Service Oriented Architecture.
- (b) Describe how a cloud-based database management system differs from an on-site database.
- (a) Define and describe system redundancy. Discuss how you might use IaaS to implement a redundancy plan.
- (b) Describe how cloud-based data storage works.
- (a) Explain about the Client Server architecture for Cloud with a neat sketch.
- (b) Explain about the traditional apps and cloud based apps.

Write short notes on the following :

- (a) Storage Virtualization
- (b) Coding of Cloud based applications
- (c) IaaS

III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science and Engineering

Elective II (A) — CLOUD COMPUTING

(Common with Information Technology)

(Effective from the admitted batch of 2015–2016)

Time : Three hours

Maximum : 70 marks

First Question is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

Answer all parts of any question at one place.

- (a) Give a note on data storage in cloud.
- (b) List out the different types of virtualization.
- (c) Mention the applications of SaaS.
- (d) What are the advantages of load balancing.
- (e) What is cloud application development?



- (f) What are the benefits of a cloud governance framework?
- (g) What is big data in the cloud?
2. (a) What is cloud computing? List out advantages and disadvantages of Cloud Computing?
- (b) Discuss about various services provided by the Cloud Computing?
3. (a) What is Application Virtualization? Give examples of Application Virtualization use?
- (b) Discuss about the server virtualization.
4. (a) Discuss about SaaS.
- (b) Explain the benefits of PaaS.
5. (a) What are the benefits of IaaS.
- (b) Discuss about cloud based data storage and backup services.
6. (a) Mention the challenges of Cloud based application development.
- (b) Discuss about web application framework.

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What is cloud governance and why it is important?

What is governing and evaluating the clouds business?

Discuss about map reducing.

List out the pros and cons of big data in the cloud.

First Question is compulsory.

Answer any FOUR from the remaining questions.

All question carry equal marks.

Answer all parts of any question at one place.

1.

- (a) What is meant by hybrid cloud?
- (b) What is the concept behind the virtualization?
- (c) What are the disadvantages of SaaS?
- (d) What is IaaS?
- (e) What are the benefits of cloud app.
- (f) What are the security risks in cloud?
- (g) What is big data in the cloud?

2

2. (a) What is cloud computing? What is not?
- (b) Describe about data storage in cloud.
- (a) Discuss about memory virtualization.
- (b) Explain desktop virtualization.
- (a) Discuss about the benefits of PaaS.
- (b) What are the advantages with SaaS solutions?
- (a) How Load balancing improves the performance in cloud computing?
- (b) Explain cloud based data storage and backup services.
6. (a) Explain web application framework.
- (b) Give an overview on server side programming.
- (a) What is governing and evaluating the clouds business.
- (b) What are the benefits of cloud migration?
- (a) Discuss the pros and cons of big data in the cloud.
- (b) Explain Map Reducing.

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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science and Engineering

Elective II: (A) - CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

(For the academic year 2020-2021 batch only)

Time : Three hours

Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

Answer all parts of any question at one place.

1.
  - (a) Discuss how cloud computing has changed companies budget for software solutions.
  - (b) Define scalability and discuss how the cloud impacts it.
  - (c) Define and describe mashup
  - (d) Define and describe a SAN



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- (e) Define and describe colocation.
- (f) What is SOA?
- (g) List PaaS benefits.
2. (a) Compare and contrast SaaS, PaaS, and IaaS, and provide an example of each.
- (b) Compare and contrast public, private, community, and hybrid clouds
3. (a) Define virtualization and discuss how the cloud impacts it.
- (b) Discuss about the data storage in the cloud.
4. (a) List reasons why companies should virtualize.
- (b) Describe the concept of the desktop on demand, and include the benefits of such a system.
5. (a) Describe the role of OpenSaaS.
- (b) Compare and contrast a web service and an SaaS solution.
6. (a) Define and describe load balancing. Discuss how you might use IaaS to implement load balancing.
- (b) Assume that you must select a cloud—based data storage solution for your company. List the factors you would consider when selecting a vendor.
7. (a) Discuss about the server-side programming with an example.
- (b) Explain about the fundamental treatment of web application frame work.
8. Write short notes on the following
- (a) Memory Virtualization,
- (b) Cloud based backup service.
- (c) Client Side programming.

Define and describe colocation  
[07 BENG - 3204] (e)

### III/IV B.Tech. DEGREE EXAMINATION.

#### Second Semester

#### Computer Science Engineering

#### Elective II (A) — CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

Time : Three hours

Maximum : 70 marks

First question is compulsory.

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Answer all parts of any question at one place.

1. (a) What is utility computing?
- (b) What is Host-based virtualization?
- (c) What are the resources to be managed by cloud provider in PaaS service model?
- (d) Differentiate between NAS and SAN.
- (e) List some popular applications of cloud apps.
- (f) What are the physical security requirements of a data centre?
- (g) Define big data.

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2. (a) What are the benefits of migrating to cloud computing?

(b) Differentiate between IaaS, PaaS and SaaS service models.

3. (a) List the pros and cons of virtualization

(b) Explain the memory mapping procedure for virtualized memory.

4. (a) Define and describe SOA.

(b) List the advantages and disadvantages of SaaS solutions.

5. (a) Describe cloud based database solutions

(b) Explain the importance of load balancing in cloud computing.

6. (a) Compare and contrast traditional applications and cloud applications.

(b) Explain the procedure to create and deploy applications using Google App engine

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7.

(a)

Describe common security threats to cloud based resources

(b)

Define business strategy and provide examples of strategic goals.

8.

(a)

Explain the map reduce architecture.

(b)

Discuss about Hadoop distributed file system.

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MAR 2020

III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science Engineering

Elective II : (A) — CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

Time : Three hours

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Answer all parts of any question at one place.

1. (a) Define Cloud computing.

(b) What is the difference between containers in VMs?

(c) What is the role of middleware in Paas model?

(d) Name any four popular IaaS service providers.

(e) What is a Stateless server?

(f) What is SLA? How important it is in cloud governance?

(g) What are different types of nodes used in Hadoop cluster model?

2. (a) What is cloud computing? What is not?

(b) List the advantages of IDaaS solutions.

3. (a) Explain about different types of virtualization.

(b) Discuss the hardware support required for implementing virtualization.

4. (a) Define and describe mashups.

(b) List the advantages and disadvantages of PaaS solutions.

5. (a) List the pros and cons of cloud-based storage.

(b) Explain about cloud-based network attached storage.

6. (a) Explain about different components effecting application scalability.

(b) Compare and contrast the roles of web services and web pages.

7. (a) Explain about disaster recovery planning in cloud environments.

(b) Discuss about the total cost of ownership for an IT solution.

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8. (a) Explain the impact of big data on cloud technologies.

(b) Explain Hadoop-map reduce model with suitable examples.

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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science and Engineering

Elective II: (A) — CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

Time : Three hours

Maximum : 70 marks

First Question is compulsory.

Answer any FOUR from the remaining questions.

All question carry equal marks.

Answer all parts of any question at one place.

1. (a) What is meant by hybrid cloud?  
(b) What is the concept behind the virtualization?  
(c) What are the disadvantages of SaaS?  
(d) What is IaaS?  
(e) What are the benefits of cloud app.  
(f) What are the security risks in cloud?  
(g) What is big data in the cloud?

2. (a) What is cloud computing? What is not?  
(b) Describe about data storage in cloud.
3. (a) Discuss about memory virtualization.  
(b) Explain desktop virtualization.
4. (a) Discuss about the benefits of PaaS.  
(b) What are the advantages with SaaS solutions?
5. (a) How Load balancing improves the performance in cloud computing?  
(b) Explain cloud based data storage and backup services.
6. (a) Explain web application framework.  
(b) Give an overview on server side programming.
7. (a) What is governing and evaluating the clouds business.  
(b) What are the benefits of cloud migration?
8. (a) Discuss the pros and cons of big data in the cloud.  
(b) Explain Map Reducing.



**[07 BENG – 3204]**

III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science and Engineering

Elective – II (A) – CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

Time : Three hours

Maximum : 70 marks

First Question is compulsory.

Answer any FOUR from the remaining questions.

All questions carry equal marks.

1. (a) Differentiate between public cloud and private cloud.
- (b) How does virtualization work in cloud computing?
- (c) What are the disadvantages of PaaS?
- (d) Explain load balancing in cloud environment.
- (e) What is cloud application development?
- (f) What is meant by cloud migration?
- (g) Explain Hadoop.

2. (a) Discuss about IaaS.
- (b) Mention the advantages and limitations of cloud computing.
3. (a) Explain different types of virtualization.
- (b) Describe about the tools and products available for virtualization.
4. (a) Explain SOA with a neat block diagram.
- (b) Differentiate between SaaS and PaaS.
5. (a) Explain cloud based block storage and database services.
- (b) Describe about IaaS and its server types.
6. (a) Differentiate between Traditional apps vs Cloud apps.
- (b) Discuss the client server distributed architecture for designing cloud based web solutions.
7. (a) Explain the importance of cloud governance.
- (b) Discuss about how disaster recovery is performed in the cloud.
8. (a) Explain the impact of big data in cloud services.
- (b) Discuss about Map Reducing.

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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science Engineering

Elective - II : (A) CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

For the academic year 2020-2021 batch only

Time : Three hours

Maximum : 70 marks

Question. No. 1 is compulsory.

Answer any FOUR questions from the remaining.

All questions carry equal marks.

Answer all parts of any question at one place.

1.
  - (a) Define and discuss cloud computing.
  - (b) List three advantages and three disadvantages of cloud computing.
  - (c) Describe potential disadvantages of PaaS.
  - (d) Define and describe NAS.
  - (e) Define and describe collocation.

1. (a) List the advantages and disadvantages of SaaS solutions.  
(b) List SaaS provider for each of the following industries:  
(i) Sales and customer relationship management  
(ii) Accounting  
(iii) Income tax filing  
(iv) Web-based meetings  
(v) Human resources
2. (a) Explain about the three components make up a cloud computing solution.  
(b) Describe three cloud-based solutions for individuals and three cloud-based solutions for businesses.
3. (a) Discuss about different types of virtualization.  
(b) Defend the following statement: Virtualization is not a new concept within computer science.
4. (a) List the advantages and disadvantages of SaaS solutions.  
(b) List SaaS provider for each of the following industries:  
(i) Sales and customer relationship management  
(ii) Accounting  
(iii) Income tax filing  
(iv) Web-based meetings  
(v) Human resources

5. (a) Define and describe Service Oriented Architecture.  
(b) Describe how a cloud-based database management system differs from an on-site database.
6. (a) Define and describe system redundancy.  
(b) Discuss how you might use IaaS to implement a redundancy plan.
7. (a) Explain about the Client Server architecture for Cloud with a neat sketch.  
(b) Explain about the traditional apps and cloud based apps.
8. Write short notes on the following:  
(a) Storage Virtualization  
(b) Coding of Cloud based applications  
(c) IaaS



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[07 BENG - 3204]

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III/IV B.Tech. DEGREE EXAMINATION.

Second Semester

Computer Science Engineering

Elective II (A) — CLOUD COMPUTING

(Effective from the admitted batch of 2015-2016)

Time : Three hours

Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining.

Answer All parts of any question at one place.

1.
  - (a) What are the storage applications of cloud computing?
  - (b) List the different types of virtualizations.
  - (c) Write the applications of SOA.
  - (d) Give a brief note on advantages of IaaS solutions.
  - (e) List the various platforms to create cloud-based applications.
  - (f) What are the basic things to be considered for business economics in evaluating cloud business impact?
  - (g) Discuss the different cloud platforms offered by various organizations.

2. (a) What is the Infrastructure needed and services provided in cloud computing? Discuss.  
(b) What are the database services provided in cloud computing? Explain.
3. (a) How to enable technologies? Write about memory virtualization technique.  
(b) Give a brief note on server virtualization.
4. (a) Distinguish between SaaS and PaaS.  
(b) What are the various open SaaS solutions? Explain.
5. (a) How IaaS utilizes cloud based NAS devices? Discuss.  
(b) How cloud-based backup services and database services are utilized? Explain.
6. (a) Distinguish between client side and server-side programming.  
(b) With a neat sketch, explain web application framework.
7. What are the different possible attacks and threats in securing a cloud and explain what disaster recovery plan template is?

8. (a) Explain Map Reduction. How it is related to Big data?  
(b) How bigdata can influence the cloud services such as Hadoop? Explain.