

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

IT



Unit CC January 2019 series

Version 1

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Introduction

Our examiners' reports are produced to offer constructive feedback on candidates' performance in the examinations. They provide useful guidance for future candidates. The reports will include a general commentary on candidates' performance, identify technical aspects examined in the questions and highlight good performance and where performance could be improved. The reports will also explain aspects which caused difficulty and why the difficulties arose, whether through a lack of knowledge, poor examination technique, or any other identifiable and explainable reason.

Where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report. A full copy of the question paper can be downloaded from OCR.

Unit CC series overview

General examiner comments on the paper

There was a significant increase in entry for this Unit CC test in January 2019 (238 candidates) compared to January 2018 (0 candidates) and June 2018 (3 candidates). Therefore the value of comparing performance across series' is negligible. The breadth of knowledge to be covered meant that some learning outcomes (LOs) seemed to be better known and understood than others.

Based on statistical data for all the items in the test, candidates were most successful on questions targeting learning outcomes 6 and 7, closely followed by learning outcomes 3 and 2. Learning outcomes 1, 4 and 5 were the areas where candidates found marks hardest to access.

Learning Outcome 1 (17-21% weighting of the unit): questions 1-4, 6, 7, 41-49

This LO requires candidates to understand the characteristics and context of cloud technology and why it is used. Questions targeting this LO had a mixed response – with many candidates achieving the marks on questions 41 and 43 and very few being candidates on questions 4 and 45 which proved more challenging.

Learning Outcome 2 (14-17% weighting of the unit): questions 5, 9-12, 50, 52, 53, 55-58

LO2 requires candidates to understand the business benefits of cloud services. This was the fourth weakest LO in terms of candidates' performance. Candidates did well on items 5, 9, 12 and 55 but found 11 and 53 challenging.

Learning Outcome 3 (24-30% weighting of the unit): questions 13-25, 28, 40, 51, 59, 61, 62 and 63

LO3 requires candidates to understand the requirements of cloud services.

Scores on this LO were reasonably strong. Candidates did particularly well on items 17, 18 and 63 with 96% being successful on these three questions. Questions 15, 21 and 55 proved more challenging and only about 25% of candidates were successful here.

Learning Outcome 4 (8-10% weighting of the unit): questions 26, 27, 29, 30, 33 and 64

LO4 requires candidates to understand the features of cloud storage. The questions targeting this LO were not particularly well answered except for question 26 when 98% of candidates were correct.

Less than 20% of candidates achieved the correct mark for each of questions 33 and 64.

Learning Outcome 5 (13-16% weighting of the unit): questions 31, 32, 34, 36, 54, 60, 65, 66, 67 and 68

LO5 requires candidates to understand the deployment requirements for cloud-based services for organisations. This LO saw the weakest candidate performance across the paper. Three questions, 31, 65 and 66 saw performance at around 60% but questions 34, 36, 54, 60 and 67 showed a very low success rate – less than 30%

Learning Outcome 6: (3-4% weighting of the unit) questions 8, 35, and 69

LO6 requires candidates to know regulatory issues that impact cloud technology. Question 69 was the most successful with 85% of candidates achieving this mark. Performance achievement on both of the other questions targeted by this LO was around the 45% figure.

Learning Outcome 7 (4-5% weighting of the unit): questions 37, 38, 39 and 70

LO7 requires candidates to know about impact, risks and security issues related to cloud technology.

Candidates achieved the highest percentage of success on these questions although performance was mixed. Nearly all candidates achieving the mark on question 38 and relatively few on question 39.

Appendix 1 Questions

Question 1

Region: US East (Illinois)					
	#CPU	ECU	Memory (GiB)	Storage (GB)	Windows Usage
General Purpose Provision					
t2.n1	1	Variable	0.5	EBS Only	\$0.0062 per hour
t2.m1	1	Variable	1.5	EBS Only	\$0.0124 per hour
t2.m2	1	Variable	2.5	EBS Only	\$0.0232 per hour

A cloud technology provider lists its prices for data usage.

Which **one** of the following describes the pricing model above?

- A
- B
- C
- D

[1]

Question 2

Which **one** of the following statements **best** describes the term cloud bursting?

- A Cloud-based storage is not metered.
- B Bandwidth restrictions are lifted during peak times.
- C Cloud resources are allowed to break through their fixed limits.
- D Computing capacity can be extended from a private cloud to a public cloud.

[1]

Question 3

A public cloud requires a router to operate.

Select **two** statements that **best** describe the purpose of a router.

- A To filter internet access.
- B To prevent access to the internet.
- C To translate hostnames to IP addresses.
- D To provide security to the internal network devices.
- E To send packets destined for non-LAN devices onward.

[1]

Question 4

A marketing agency specialises in social media advertising and hosts its systems on a hybrid cloud. Why is cloud technology suitable for the marketing company?

Select the **two** statements that apply.

- A The company has a global workforce.
- B The company's staff levels may vary with demand.
- C The company needs secure access on a 24/7 basis.
- D The company's workforce are teleworkers.

[1]

Question 5

Read the following statement and select if it is **true** or **false**.

Many cloud service models provide a simplified dashboard user interface. These can be customised for specific user groups.

True

False

[1]

Question 6

Which **two** statements **best** describe the responsibility of network operation centre staff?

A To monitor cloud resources.

B To manage user incidents and problems.

C To manage the ordering of network hardware.

D To manage CPU, RAM and secondary storage.

E To allocate disk space and memory to users for application of chargeback costs.

[1]

Question 7

Nalin is responsible for migrating large organisations to cloud technology. He has experience in networking and virtualisation technology.

What is the **best** job title for Nalin's role?

A Cloud architect

B Cloud capacity planner

C Cloud service manager

D Support desk associate

[1]

Question 8

Regulatory Issue	Year of Introduction	No of Cases
#1	1988	3000
#2	2003	56
#3	1990	400
#4	2000	43

Phil is a cloud architect who is gaining an understanding of the impact of regulatory issues on the cloud-based provider that he works for. He has produced an analysis of the number of cases dealt with to date.

What regulatory issue is indicated by #2 in the table?

- A
- B
- C
- D

[1]

Question 9

Read the following statement and select if it is **true** or **false**.

With outsourcing and cloud technology, you do not own any of the servers. With cloud technology, you pay for what you use as and when you use it.

True

False

[1]

Question 10

Mike is setting up a new business as a shipping agent. He would like to use cloud technology as it reduces his start-up costs. Which factors should Mike consider when implementing cloud services?

Select the **two** statements that apply.

A Ease of access

B Costs are variable

C Dependency on hardware

D Amount of computing resources

[1]

Question 11

Which **one** of the following features of cloud technology enhances business value?

- A Capital expenditure is zero.
- B The cost of operating the business is predictable.
- C Data storage about production targets is reduced.
- D Backups of production data can be scheduled on a daily basis.

[1]

Question 12

Which **one** of the following statements **best** describes a business benefit of using cloud service models?

- A All cloud service models reduce the speed of deployment.
- B Cloud service models do not require any user business skills.
- C Cloud service models are designed around the needs of the user.
- D Using a cloud service model improves the speed of code development.

[1]

Question 13

FaceTime is an example of which specific cloud service model?

- A
- B
- C
- D

[1]

Question 14

Cloud service providers can supply services such as visualised computing resources over the internet.

Which **one** of the following is the **best** description of this type of service?

- A
- B
- C
- D

[1]

Question 15

Read the following statement and select if it is **true** or **false**.

In an IaaS system, the supplier is responsible for the physical datacentre infrastructure and for deploying updates to the software infrastructure.

True

False

[1]

Question 16

Which **one** of the following is the **best** formula for calculating the daily charge for a client to use a cloud platform?

A $\text{Daily charge} = \text{Monthly storage used} / 30$

B $\text{Daily charge} = \text{Storage used} / 365$

C $\text{Daily charge} = \text{Database size} + \text{Email size} + \text{OS size}$

D $\text{Daily charge} = \text{Storage used} / 365 \times \text{rate}$

[1]

Question 17

Megan is an expert in legal compliance. How does she use her skills in a cloud technology environment?

Select the **most** appropriate answer.

A Ensures the cloud environment meets current legislation.

B Checks for data accuracy in data migration.

C Checks that credit card data is stored securely.

D Checks that anti-virus software is installed on the cloud host.

[1]

Question 18

Read the following statement and select if it is **true** or **false**.

SaaS provides users with access to word processing applications.

True

False

[1]

Question 19

Which **one** of the following hardware is required to operate a cloud-based system?

- A Database
- B Hypervisor
- C Storage
- D Protocol

[1]

Question 20

Amelia works for a multi-national company based in Shanghai and normally uses an access point in Hong Kong to connect to the company's cloud provider. One morning, Amelia finds that her connection has changed to the New Delhi access point.

What are the **most** likely reasons for the change of access point?

Select the **two** statements that apply.

- A The Hong Kong access point is off line.
- B The Hong Kong access point has a faster router.
- C The New Delhi access point has a lower round trip time.
- D The Hong Kong access point has been manually re-routed to New Delhi.

[1]

Question 21

Lois works in a datacentre management team. She receives an alert that a bank of servers has failed to respond to PING requests. Lois thinks that there are four possible reasons for the failure:

- 1 one of the three leased lines to the datacentre has been accidentally cut
- 2 the air conditioning units for the bank of servers has failed
- 3 the backup power supplies for the bank of servers has failed
- 4 the servers were scheduled to be rebooted for system updates.

Select the correct answer that shows **all** of the reasons that apply.

- A
- B
- C
- D

[1]

Question 22

What is the name of the networking service that enables the latency of a datacentre connection to be measured?

- A
- B
- C
- D

[1]

Question 23

Sergio manages several clusters of cloud servers located throughout the world. He co-ordinates the starting and stopping of clusters to reduce downtime for end users.

What is the name of the process that Sergio performs on the clusters?

- A
- B
- C
- D

[1]

Question 24

Which **three** statements **best** describe the benefits of virtualisation?

- A
- B
- C
- D
- E
- F

[1]

Question 25

Which **one** of the following is **not** a datacentre component?

- A
- B
- C
- D




[1]

Question 26

A desktop computer synchronises with a cloud provider and displays symbols to indicate the status of the synchronisation process.

Click the symbol and link it with the appropriate meaning.

To remove a link, select the linking line.

Symbol	Meaning
	<input type="text" value="synchronisation unavailable"/>
	<input type="text" value="synchronisation completed"/>
	<input type="text" value="synchronisation in progress"/>

[1]

Question 27

Secure cloud storage is usually integrated with SaaS productivity suites. Which **one** of the following statements **best** describes the reason for this integration?

- A
- B
- C
- D

[1]

Question 28

Read the following statement and select if it is **true** or **false**.

A PaaS service model recreates servers, networking, and storage in the cloud. This allows users to create complex applications on a pay-as-you-go service.

-
-

[1]

Question 29

Filename: personneldb.sql
Permissions: Public (Read Only)
None (Private)

A user accesses a file with the access permissions above. The file permissions match the user's role within the organisation.

What is the role of the user?

- A
- B
- C
- D

[1]

Question 30

Which **two** statements **best** describe the AWS import/export snowball?

- A
- B
- C
- D

[1]

Question 31

Cloud vendors provide performance metrics to enable businesses to monitor the service they receive.

Which **one** of the following is **not** a performance metric?

- A
- B
- C
- D

[1]

Question 32

Which **one** of the following is **not** a part of a cloud readiness assessment?

- A
- B
- C
- D

[1]

Question 33

A smartphone has an installed app that synchronises data automatically to the Cloud using a TCP/IP protocol.

Which of the following statements could cause synchronisation to fail?

- 1 the user's account credentials have expired
- 2 the mobile phone is temporarily out of range of a signal
- 3 the smartphone switches from a 3G signal to a WiFi signal
- 4 the user is using an invalid TCP/IP protocol to access the Cloud.

Select the correct answer that shows **all** of the statements that apply.

- A
- B
- C
- D

[1]

Question 34

Which **one** of the following parameters would you **not** expect to use to measure Quality of Service (QoS)?

- A
- B
- C
- D

[1]

Question 35

A cloud-based provider hosts a NAS device used by a military ship manufacturer to store ship propeller designs. A malicious user attempts to access the NAS device.

What is the name of the relevant legislation that is being broken?

- A
- B
- C
- D

[1]

Question 36

Each of the following statements (A-F) could apply to **either** performance metrics **or** quality of service when choosing a cloud service provider:

- A understanding percentage uptime
- B explaining low throughput
- C understanding percentage response to alerts
- D explaining percentage over disk allocation budget
- E explaining low latency problems
- F explaining dropped packets.

In the grid below, indicate which statement relates to **either** performance metrics **or** quality of service.

Performance metrics		Quality of service	
A	<input type="radio"/>	A	<input type="radio"/>
B	<input type="radio"/>	B	<input type="radio"/>
C	<input type="radio"/>	C	<input type="radio"/>
D	<input type="radio"/>	D	<input type="radio"/>
E	<input type="radio"/>	E	<input type="radio"/>
F	<input type="radio"/>	F	<input type="radio"/>

[1]

Question 37

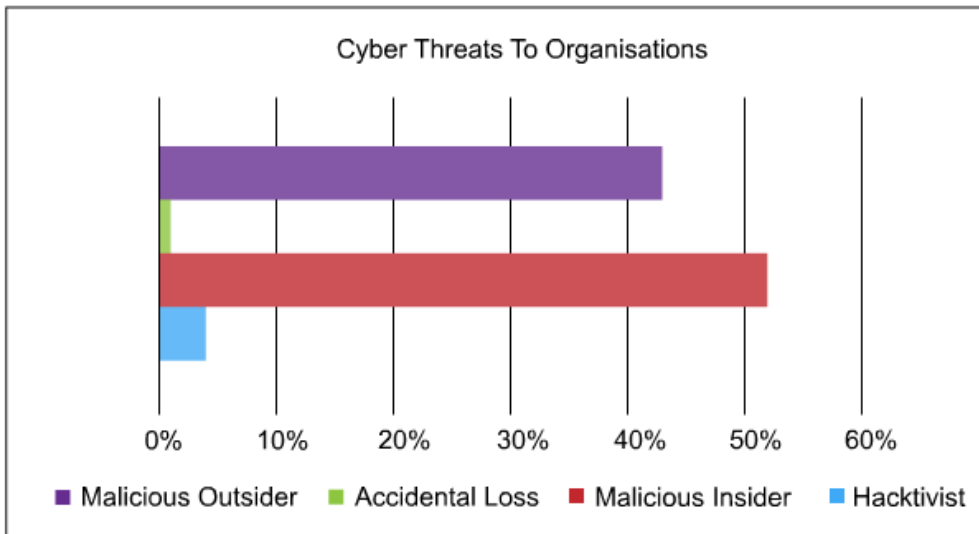
Kari is responsible for monitoring the performance of the cloud provider's service in her organisation. One of her colleagues reports that mobile access to the provider is slow.

Which **one** of the following is the **most** likely reason for the slowness of the provider's services.

- A
- B
- C
- D

[1]

Question 38



Consider the graph above.

Where does the biggest cyber threat to organisations exist?

- A From malicious insiders
- B From malicious outsiders
- C From hactivists
- D From accidental loss

[1]

Question 39

A vendor's support technician follows a series of steps in response to an incident relating to the provision of cloud services.

- 1 identify the issue
- 2 document the issue
- 3 escalate the issue to a responsible person
- 4 provide first response.

Select the answer that lists the steps in the correct order.

- A
- B
- C
- D

[1]

Question 40

Read the following statement and select if it is **true** or **false**.

XaaS is a combination of IaaS and traditional IT outsourcing models.

-
-

[1]

Question 41

A financial services company uses cloud technology to allow immediate access to resources as soon as they are uploaded.

What cloud technology characteristic is this an example of?

- A
- B
- C
- D

[1]

Question 42

Complete the following sentence:

The provision of services where capacity is obtained incrementally when required is called...

- A
- B
- C
- D

[1]

Question 43

Click the cloud model and link it with the appropriate location.

To remove a link, select the linking line.

Cloud model	Location
private	off-premises
public	on-premises

[1]

Question 44

Which **one** of the following is a requirement for the operation of a private cloud infrastructure?

- A A WiFi network
- B A software stack
- C An in-house DNS server
- D A good internet connection

[1]

Question 45

Each of the following statements (A-F) could apply to an established online retail company, to a start-up supplier of builder's materials or both.

- A stock can be added quickly
- B low capital costs
- C user's login credentials can be changed on-demand
- D the technology allows the business to shut down resources when it is closed at weekends
- E employees can use their own devices to access online CRM and database systems
- F the system's resources can be adapted to suit the changing sales and supplier trends.

In the grid below, indicate which statement relates to an established online retail company, start-up supplier of builder's materials or both.

Established online retail company		Start-up supplier of builder's materials	
A	<input type="radio"/>	A	<input type="radio"/>
B	<input type="radio"/>	B	<input type="radio"/>
C	<input type="radio"/>	C	<input type="radio"/>
D	<input type="radio"/>	D	<input type="radio"/>
E	<input type="radio"/>	E	<input type="radio"/>
F	<input type="radio"/>	F	<input type="radio"/>

[1]

Question 46

Which **one** of the following is a reason why a research and development facility may **not** benefit from cloud technology?

- A
- B
- C
- D

[1]

Question 47

Aneesha wants to migrate the company email system to a cloud platform, but her manager does not want to.

Select a reason why her manager does not want to migrate the email system.

- A
- B
- C
- D

[1]

Question 48

Which **one** of the following is **not** a valid reason for the adoption of cloud technology?

- A Information security concerns.
- B Possible disclosure of personal customer data.
- C Existing high level of technical knowledge and training.
- D Existing high level of investment in traditional IT infrastructure.

[1]

Question 49

Complete the following sentence:

The person with responsibility for tracking the total cost of cloud ownership is called a...

- A cloud architect.
- B capacity planner.
- C vendor manager.
- D cloud service manager.

[1]

Question 50

Which **one** of the following is a description of cloud technology usage compared to outsourcing usage?

- A Cloud technology and outsourcing are used only in mature businesses.
- B Cloud technology cannot be used for offshore operations.
- C Cloud technology is not used for mundane task delegation.
- D Both cloud technology and outsourcing are used to free up internal resources.

[1]

Question 51

Read the following statement and select if it is **true** or **false**.

In a PaaS cloud service model, the cloud vendor provides the services that an organisation needs to use.

True

False

[1]

Question 52

Which **one** of the following is a description of a service level in a cloud technology environment?

- A
- B
- C
- D

[1]

Question 53

John receives a document from his cloud provider that states:

'In December, our Network Operating Centre reported 99.995% availability and 98% of helpdesk calls were answered within 30 seconds. This compares favourably with our outsourcing competitors.'

What is the name of terms being used to compare cloud technology with outsourcing?

- A
- B
- C
- D

[1]

Question 54

Each of the following statements (A-F) could apply to the technical elements, financial elements or both of a cloud readiness assessment.

- A internet connection speed
- B costs of employment of management staff
- C choice of SSD or magnetic disks
- D internet bandwidth
- E long-term disk usage prices
- F DNS registration.

In the grid below, indicate which statement relates to technical elements, financial elements or both.

Technical elements		Financial elements	
A	<input type="radio"/>	A	<input type="radio"/>
B	<input type="radio"/>	B	<input type="radio"/>
C	<input type="radio"/>	C	<input type="radio"/>
D	<input type="radio"/>	D	<input type="radio"/>
E	<input type="radio"/>	E	<input type="radio"/>
F	<input type="radio"/>	F	<input type="radio"/>

[1]

Question 55

Which **one** of the following is a variable cost when implementing cloud services?

- A
- B
- C
- D

[1]

Question 56

The costs associated with cloud technology vary over time depending on usage.

Which **one** of the following is a **disadvantage** of this feature?

- A It costs more for the company in the long term.
- B It is difficult to forecast sales demand for goods.
- C It is difficult for companies to accurately forecast cash flow.
- D It is not possible to obtain a business loan when costs are variable.

[1]

Question 57

A small business wants to sell garden shed designs using cloud technology.

Which **one** of the following reasons outlines why cloud technology is a good option for this business?

- A Allows goods to be distributed over the internet.
- B Allows new staff to be employed as and when needed.
- C Allows customers to return their goods if they want a refund.
- D Allows owners of the business to have new hardware delivered quickly.

[1]

Question 58

Read the following statement and select if it is **true** or **false**.

Cloud technology can increase barriers to data access for users.

True

False

[1]

Question 59

Which **one** of the following is a technical skill needed to design a SaaS cloud model?

A Delivering training to users.

B Migrating large databases to a new server.

C Determining OS, memory and storage requirements.

D Producing income and growth forecasts based on CPU utilisation.

[1]

Question 60

Each of the following statements (A-F) could apply to the suitability of an organisation's infrastructure, the ability to reliably access cloud-based services or both.

- A the organisation has structured cabling installed in its buildings
- B the organisation has local IT support staff
- C the organisation has a fibre optic leased line
- D the organisation has a management team which has networking knowhow
- E the organisation has a backup internet line in case of failure of the main line
- F the organisation does not have outgoing bandwidth limits.

In the grid below, indicate which statement relates to the suitability of an organisation's infrastructure, the ability to reliably access cloud-based services or both.

Suitability of an organisation's infrastructure		Ability to reliably access cloud-based services	
A	<input type="radio"/>	A	<input type="radio"/>
B	<input type="radio"/>	B	<input type="radio"/>
C	<input type="radio"/>	C	<input type="radio"/>
D	<input type="radio"/>	D	<input type="radio"/>
E	<input type="radio"/>	E	<input type="radio"/>
F	<input type="radio"/>	F	<input type="radio"/>

[1]

Question 61

A vendor manager spends one week producing documents that ensure cloud customers do not breach legislative compliance.

Which **one** of the following reasons outlines why this task is appropriate for the vendor manager?

- A
- B
- C
- D

[1]

Question 62

Which **one** of the following roles requires skills in provisioning of a cloud server?

- A
- B
- C
- D

[1]

Question 63

Which **one** of the following defines the rules used to send data over a cloud-based network?

- A
- B
- C
- D

[1]

Question 64

A database designer saves multiple copies of a database on a cloud-based storage server with private permissions set. After a weeks' holiday the designer finds only one copy of the database remains on the server. Listed below are possible reasons for the deletion of the database copies:

1	a malicious user has deleted the copies
2	the database designer has set an option for the copies to delete after five days of inactivity
3	the cloud-based storage server implements a data deduplication system
4	the cloud-based storage server has exceeded its storage quota and duplicate files have been removed by helpdesk staff.

Select the correct answer that shows **all** of the reasons that apply.

- A
- B
- C
- D

[1]

Question 65

Each of the following statements (**A-F**) could apply to **either** affordability **or** the security of the datacentre when considering the adoption of cloud services.

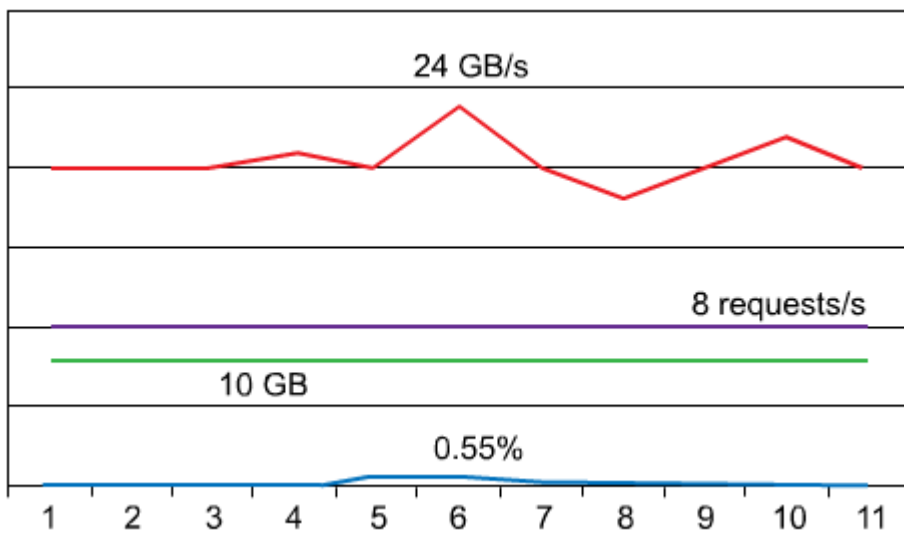
- A the cloud service has a different charging rate for off-peak hours
- B the cloud service is protected by hardware firewalls
- C the cloud service allows charges to be adjusted for international bandwidth
- D the cloud service has redundant firewalls
- E the cloud provider has co-locations for its servers
- F the cloud service can scale to meet the future demands of the company.

In the grid below, indicate which statement relates to **either** affordability **or** the security of the datacentre.

Affordability		Security of the datacentre	
A	<input type="radio"/>	A	<input type="radio"/>
B	<input type="radio"/>	B	<input type="radio"/>
C	<input type="radio"/>	C	<input type="radio"/>
D	<input type="radio"/>	D	<input type="radio"/>
E	<input type="radio"/>	E	<input type="radio"/>
F	<input type="radio"/>	F	<input type="radio"/>

[1]

Question 66



The above is a screen shot that is included in a Service Level Agreement (SLA).

What is the screen shot an example of?

- A
- B
- C
- D

[1]

Question 67

Which **three** statements **best** identify the contents of a Service Level Agreement (SLA)?

- A Dispute resolution procedures
- B Technical infrastructure design
- C Change control processes
- D Cost forecast
- E Liability for service disruption
- F Copyright and designs statement

[1]

Question 68

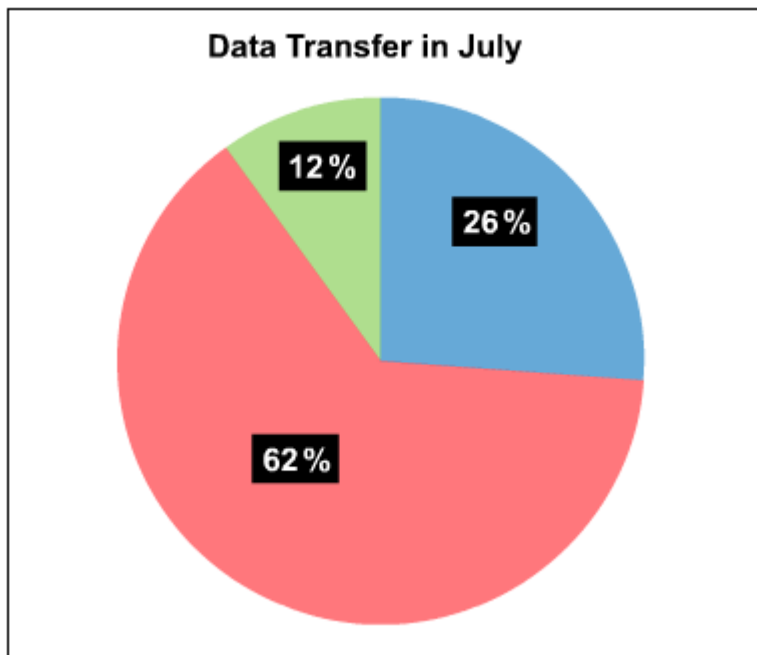
Click the Cloud Service Level Agreement (CSLA) term and link it with the appropriate meaning.

To remove a link, select the linking line.

Cloud SLA term	Meaning
transparency	email showing responses to Freedom Of Information requests
disaster process recovery notification	clear statements of data breach notifications
legal data release notification	email trail showing files and data restored

[1]

Question 69



A cloud provider transfers data mainly to the USA and Asia. The provider produces a monthly report that summarises the percentage of data transfers made each month.

What part of the world accounts for 12% of the data transfers in July?

- A
- B
- C
- D

[1]

Question 70

```
Approximate round trip times in milli-seconds:  
Minimum = 82ms, Maximum = 251ms, Average = 177ms
```

Marie works in a network operations centre for a large cloud technology provider. She has written an automated test to check if a specific host is performing satisfactorily.

Above is a screen shot of the output of her test.

What is the information that is displayed in this output?

- A
- B
- C
- D

[1]

Supporting you

For further details of this qualification please visit the subject webpage.

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