OCR
Oxford Cambridge and RSA

CAMBRIDGE TECHNICALS LEVEL 3 (2016)

Examiners' report

IT

05838–05842, 05877

Unit CC January 2024 series

Contents

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.

Links to the question paper and a full copy of the mark scheme can be downloaded from Teach Cambridge.

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Unit CC series overview

Candidates who did well on this paper generally:	Candidates who did less well on this paper generally:
Correctly answered questions for the following teaching content: • 1.1 Cloud technology characteristics and terms • 1.3 Types of organisation that would benefit • 1.4 Types of organisation that may not benefit from cloud technology • 3.1 Cloud service models • 3.3 Organisations' internal skills requirements to support their cloud model	Teaching content candidates found challenging: • 2.1 Similarities and differences between cloud technology and outsourcing • 3.2 Accountabilities and responsibilities based on cloud service model • 3.4 Technology that make cloud services possible • 4.3 Permission levels • 5.1 Considerations for adopting cloud services

General comments on the paper

The scope of learning outcomes within this unit and the breadth of knowledge required has meant that some learning outcomes (LOs) were better understood than others. Based on the statistics for the individual items in the Cloud Technology multiple choice test, candidates overall were most successful answering questions targeting LO1: Understand the characteristics and context of cloud technology and why it is used. Candidates found LO2: Understand the business benefits of cloud services the hardest.

Learning outcome 1: questions 1-14

This LO requires candidates to understand the characteristics and context of cloud technology and why it is used. Questions targeting this LO had a positive response, with many candidates achieving the marks on questions 1-2, 4-11, 13-14 and very few candidates achieved marks for question 12. In particular, students found questions 3 and 12 challenging.

Learning outcome 2: questions 15-25

LO2 requires candidates to understand the business benefits of cloud services. Candidates did well on questions 16, 18, 20-21, 23-24 for this LO particularly question 16 and 18, but found questions 15, 17, 19, 22 and 25 challenging.

Learning outcome 3: questions 26-45, 70

LO3 requires candidates to understand the requirements of cloud services. Questions for this learning outcome that presented difficulties for candidates were questions 31, 33-34, 39, 41 and 45. Candidates did well on questions 29-30, 36, 38 and 42.

Learning outcome 4: questions 46-52

LO4 requires candidates to understand the features of cloud storage. There were seven questions which addressed this learning outcome. Responses to question 48-49 and 52 were the weakest.

Learning outcome 5: questions 53-62

This LO requires candidates to understand the deployment requirements for cloud-based services for organisations. Questions 56, 59 and 61 were answered well with questions 54-55 and 58 less successful.

Learning outcome 6: questions 63-65

LO6 requires candidates to know the regulatory issues that impact cloud technology. There were three questions which targeted this learning outcome. All questions were successfully answered.

Learning outcome 7: questions 66-69

LO7 requires candidates to know about impact, risks and security issues related to cloud technology. Of the four questions addressing this learning outcome, candidates were most successful with question 67 and 66, 68 proved difficult.

Appendix 1 Questions

Question 1

Which of the following best describes on-demand self-service?

Select the correct answer.

A   The provision of cloud resources whenever they are required.

B   The provision of cloud services by the end user.

C   The provision of cloud services to the end user whenever they are required.

D   The provision of cloud services to the limit of not disrupting the host operations.

[1]

Question 2

Which characteristic of cloud computing is shown in the diagram?

Select the correct answer.

A   Automation

B   Cloud bursting

C   Elasticity

D   Resource Pooling
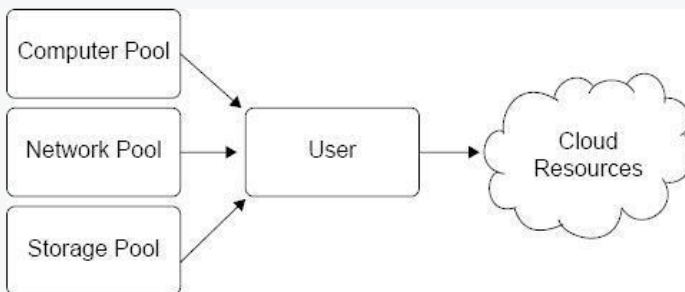
[1]

Question 3

Which **two** statements best describe the advantages of using multi-tenancy for a cloud environment?

Select **two** statements.

A	Each tenant has control over when to install their own updates.

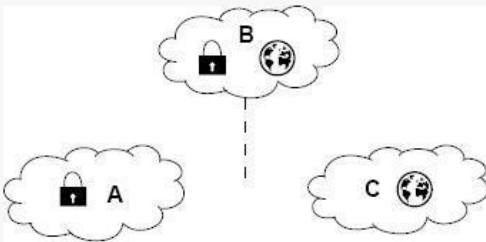| B	Only one instance of an application needs to be run.

C	Software development and maintenance costs are shared between the tenants.

D	Tenants' data can be shared amongst each other.

[1]

Question 4

Which cloud environment is represented by Cloud B in the diagram?

Select the correct answer.

A	Community

B	Hybrid

C	Private

D	Public

[1]

Question 5

Where would sensitive data be stored in a hybrid cloud environment?

Select the correct answer.

A | In the community cloud

B | In the hybrid cloud

C | In the private cloud

D | In the public cloud

[1]

Question 6

If the cloud model used is off premises, where are the facilities located?

Select the correct answer.

A | In premises hired by the end user but in a different location to their main building.

B | In premises provided by the cloud provider.

C | In the cloud provider's office building.

D | In the cloud user's premises.

[1]

Question 7

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

One of the technical differences between the private and public cloud types is that the public cloud only requires a good internet connection.

True

False

[1]

Question 8

Which type of organisation would **most** benefit from cloud technology?

Select the correct answer.

A	Intelligence gathering organisation.

B	Organisations with a fixed number of employees all year round.

C	Organisations with a remote workforce.

D	Rural company with a 56kbps internet connection.

[1]

Question 9

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

Cloud computing benefits marketing agencies as it allows instant collection and collation of consumer data.

True

False

[1]

Question 10

Which of the following is a reason why an organisation would benefit from cloud technology?

Select the correct answer.

A   Lack of capital.

B   Lack of control over server configuration.

C   Lack of data mobility between cloud vendors.

D   Lack of internet connection.

[1]

Question 11

Which of the following types of organisation might **not** benefit from cloud technology?

Select the correct answer.

A	Educational establishment

B	Online retail

C	Research and development facility

D	Worldwide software development company

[1]

Question 12

Select the statements from the list below which are reasons why an organisation might **not** want to use cloud technology.

Select **all** the statements that apply.

A	Account hijacking

B	Data loss

C	Decreased customer accessibility

D	Increased technical costs

E	Insecure APIs

[1]

Question 13

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

If internal processes do not align with cloud services, then a company may not benefit from cloud technology.

True

False

[1]

Question 14

Which organisational role is responsible for costing the resource allocations to apply chargeback costs?

Select the correct answer.

A	Capacity planner

B	Cloud architect

C	Cloud service manager

D	Vendor management staff

[1]

Question 15

How is utilising cloud technology similar to outsourcing an organisations IT service?

Select **all** the statements that apply.

A
Both allow for immediate flexibility in changing the service.

B
Both make use of technical expertise the organisation does not have.

C
Both require upfront payments for services to be used.

D
The organisation does not own the servers.

[1]

Question 16

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

The service levels for both cloud services and outsourcing will include minimum uptime targets.

True

False

[1]

Question 17

Which of the following is true about the costs of both cloud services and outsourcing?

Select **all** the statements that apply.

A | Both allow a fixed monthly cost option.

B | Both allow a 'pay as you grow' option.

C | Both require fixed term contracts for services.

D | Both require network managers to be employed by the organisation.

[1]

Question 18

Which **three** reasons best describe why an organisation must consider security when implementing cloud services?

Select **three** reasons.

A | It is a legal requirement to consider it when implementing cloud services.

B | Their customers will be expecting their data to be protected.

C | They can be fined if they have not considered it.

D | To be able to use security in the advertising for their services.

[1]

Question 19

Read the following items about the costs of cloud environments.

Drag each item (**A-G**), into the appropriate drop zone to indicate whether it could be applied to **either** fixed cost **or** variable cost.

Options

| A. Application subscription | B. Disk Space | E. Network Traffic | G. Server size | D. Management cost | C. GB RAM |

| F. Number of cores |

Fixed cost   Variable cost

[1]

Question 20

How are integrity risks reduced by using cloud technology?

Select the correct answer.

A | Data backup is available.

B | Data is always available.

C | Only one central copy of the data is kept.

D | Verification is always applied to all data input.

[1]

Question 21

How does cloud technology enhance business value?

Select the correct answer.

A | Allows access and data usage to be monitored.

B | Allows all business processes to be replicated.

C | Allows anybody to access the data only in the office.

D | Allows for accurate on and offline usage to be logged.

[1]

Question 22

How do redundancy links enhance business value when using cloud technology?

Select the correct answer.

A | They allow for increased availability.

B | They allow multiple people to access the data from anywhere at the same time.

C | They allow the data to be backed up.

D | They prevent failure of network components.

[1]

Question 23

Read the following paragraph about the business benefits of different cloud service models.

Select the missing words from the drop down list to complete the paragraph.

[dropdown] ▼ do not need to worry about the platform or infrastructure [dropdown] ▼ to development. This will [dropdown] ▼ the speed of internal development and [dropdown] ▼ .

[1]

Question 24

Which **three** statements best describe why the cloud service should be designed around the needs of users?

Select **three** statements.

A | Different users have different requirements from the software.

B | The technical skill of each user is different.

C | To allow the interface to meet the corporate design requirements.

D | To prevent different users from having access to options they do not require.

[1]

Question 25

Why **must** the cloud service be designed around the needs of users?

Select **all** the correct answers that apply.

A | To allow horizontal and vertical partitioning of access right to take place.

B | To allow self-dash to be used.

C | To enable account lockout to be used to protect the security of user data.

D | To enable user experience provisioning.

[1]

Question 26

Which cloud service model is described in the statement?

"It allows customers to connect to the internet and use cloud-based apps"

Select the correct answer.

A | CaaS

B | PaaS

C | SaaS

D | XaaS

[1]

Question 27

Which cloud service model allows customers to provision, create an instance, run and manage one or more applications within a complete environment?

Select the correct answer.

A | IaaS

B | PaaS

C | SaaS

D | XaaS

[1]

Question 28

Which cloud service model offers its customers processing, storage and networking resources?

Select the correct answer.

A | CaaS

B | IaaS

C | PaaS

D | XaaS

[1]

Question 29

Which cloud based service can include voice and video calls, voice and video conferencing, VoIP and messaging?

Select the correct answer.

A | CaaS

B | IaaS

C | PaaS

D | SaaS

[1]

Question 30

Which cloud based service is described in the statement?

"Any IT function can be transformed into a service".

Select the correct answer.

A | CaaS

B | IaaS

C | SaaS

D | XaaS

[1]

Question 31

In the IaaS cloud service model, who is responsible for the creation of virtual servers?

Select the correct answer.

A | Cloud Vendor

B | Customer

C | Organisation

D | Reseller

[1]

Question 32

A customer has purchased a PaaS cloud service model. They have been given a list of responsibilities:

1. Deploying the application
2. Developing the application
3. Providing the software to develop the application
4. Supporting the finished application

Select the correct answer that shows the responsibilities that the **customer** is accountable for.

A | 1,2 and 3

B | 1, 2 and 4

C | 1, 3 and 4

D | 2,3 and 4

[1]

Question 33

Which cloud service model is being advertised in the advert?

Have an Idea?

Don't have the infrastructure to make it happen?

We can provide the software for you to use.

All cloud based.

Call for a quote.

Select the correct answer.

A   CaaS

B   IaaS

C   SaaS

D   XaaS

[1]

Question 34

Technical skills are required to move away from 'installing' to 'provisioning'.

Select **all** the items from the list below that would need to have information provided to allow a server to be created.

A   Bandwidth

B   Drive space

C   Memory

D   Operating System

E   RAID Level

[1]

Question 35

Drag each skill (**A-C**), into the drop zone with the appropriate statement.

Options

A. Data Integration	B. Project Management	C. Vendor Management

Required for the understanding of SLAs	Required to deliver transition from traditional IT to using cloud services	Taking data from disparate sources and consolidate then into one database

[1]

Question 36

Which staff roles in an organisation require vendor management skills?

1. All staff
2. Cloud architect
3. Cloud service manager
4. Vendor management staff

Select the correct answer that shows all the staff roles that apply.

A | 1 and 2

B | 1 and 3

C | 2 and 3

D | 3 and 4

[1]

Question 37

Which of the following staff roles should have data integration skills?

Select the correct answer.

A | Capacity planner

B | Cloud architect

C | Cloud service manager

D | Vendor management staff

[1]

Question 38

Which skills are used to monitor changing costs as a business grows?

A | Business and financial skills

B | Security and compliance skills

C | Technical skills

D | Vendor management skills

[1]

Question 39

Read the following paragraph about security and compliance skills.

Select the missing words from the drop down list to complete the paragraph.

Security and compliance skills involve ensuring that the [＿＿＿▼] service and the way in which the organisation interacts with it does not [＿＿＿▼] data security in terms of any [＿＿＿▼] or compliance [＿＿＿▼] .

[1]

Question 40

Which type of storage is shown in the diagram below?

Striped

Block A	Block D
Block B	Block E
Block C	Block F
Disk 1	Disk 2

Select the correct answer.

A | Just a bunch of disks (JBOD)

B | Network attached storage (NAS)

C | Redundant array of independent disks (RAID)

D | Storage area network (SAN)
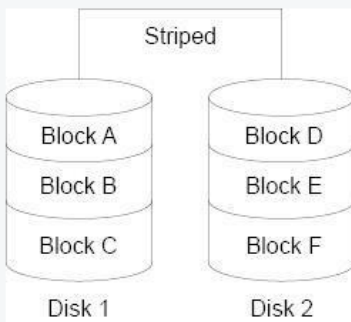
[1]

Question 41

Cloud services run a variety of protocols and services.

Drag each option (**A-E**), into the appropriate drop zone to indicate whether it could be applied to **either** a protocol **or** a service.

Options

| D. SMTP | B. DNS | A. DHCP | C. HTTP | E. TCP/IP |

Protocol   Service

[1]

Question 42

Three types of software are required to enable the cloud to function.

Drag each option (**A-C**), into the drop zone with the appropriate definition.

Options

| A. Application | B. Database | C. Operating System |

An electronic system that allows data to be easily stored

Any program designed for the end-user

Software that supports a computers basic function

[1]

Question 43

What is a hypervisor?

Select the correct answer.

A | A computer file, typically called an image, that behaves like an actual computer.

B | A computer resource that uses software instead of a physical computer to run programs and deploy apps.

C | Computer software, firmware or hardware that creates and runs virtual machines.

D | The transformation of a hardware dependent network into one that is software-based.

[1]

Question 44

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

Cloud orchestration uses code to perform a single repetitive task.

True

False

[1]

Question 45

Data centres require the temperature to be regulated.

Drag the steps used to regulate the temperature, into the correct order.

Options

Cold air rises out of the floor	Hot air pulled back into the air conditioner	Cold air pulled through the server

Discharged hot air rises towards the ceiling

1

2

3

4

[1]

Question 46

What is the **most** likely outcome if the synchronisation of a file between the local host and the cloud host is interrupted?

Select the correct answer.

A | The file will be corrupted.

B | The file will be deleted.

C | The file will be unavailable.

D | The upload will fail.

[1]

Question 47

Cloud vendor storage services are often integrated with other applications.

Which of the following allows a file to be edited via the browser?

Select the correct answer.

| A | The IaaS productivity suite. |

| B | The integration of HTML 5 into the browser framework. |

| C | The SaaS productivity suite. |

| D | The use of a virtual machine. |

[1]

Question 48

When is it **most** appropriate to assign the permission level of "None" (private) to users on a cloud service?

Select the correct answer.

| A | When a specific team needs to have access to the file. |

| B | When it is a confidential file that needs to be hidden from view. |

| C | When it is a system file that a user should not be allowed to access. |

| D | When the only person to have access is the owner of the file. |

[1]

Question 49

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

A file that has been given a public permission level can be accessed by anyone within a company.

True

False

[1]

Question 50

Different actions can be performed on a file stored in a cloud:

1. Copy
2. Delete
3. Move
4. Rename

Select the correct answer that shows all the actions the user can perform if they are granted the "Edit" permission level.

A | 1, 2 and 3

B | 1, 3 and 4

C | 2, 3 and 4

D | 1, 2, 3 and 4

[1]

Question 51

Which of the following is an advantage of using a command line interface (CLI) to migrate data hosted in-house to a cloud-based service?

Select the correct answer.

A | It can be automated.

B | It can be ported to different operating systems.

C | It only lists the commands that can be run.

D | It requires minimal technical expertise.

[1]

Question 52

Which **two** statements **best** describe why an organisation might send data physically to a cloud vendor's local data centre when migrating to a cloud-based service?

Select **two** statements.

A | When the organisation does not have a reliable internet connection.

B | When the organisation has data stored across multiple physical data centres.

C | When the organisation only has a small amount of data.

D | When the organisation wishes to release themselves of the responsibility of uploading their own data.

[1]

Question 53

If a vendor's cloud deployment model does not meet the needs of the organisation, what is the **most** appropriate action to take?

Select the correct answer.

A   Ask the vendor to alter their model.

B   Continue with locally hosting.

C   Get the organisation to change their needs.

D   Look for a different vendor.

[1]

Question 54

Several areas have been identified where redundance should be considered by a cloud vendor:

1. Geographic
2. Hardware
3. Network
4. Personnel

Select the correct answer that shows all areas that **should** have redundancy.

A   1, 2 and 3

B   1, 3 and 4

C   2, 3 and 4

D   1, 2, 3 and 4

[1]

Question 55

Why will the price of cloud services change between peak and off-peak hours?

Select the correct answer.

A | More staff are required during off-peak hours.

B | The cost of electricity is cheaper during off-peak hours.

C | There are less demands on the CPU during off-peak hours.

D | There are less users online during off-peak hours.

[1]

Question 56

One of the roles of an IT department when choosing cloud services is to help to understand performance metrics.

Read the following performance metrics.

Drag each statement from the options (**A-E**) below, into the appropriate drop zone to indicate whether it could be applied to **either** relevant to choosing a cloud service **or** not.

Options

| C. Number of incorrect passwords entered | D. Percentage of staff sick days | E. Service availability |

| A. Input/Output operations per second (IOPS) | B. Mean time between failures (MTBF) |

Relevant to choosing a cloud service   Not relevant to choosing a cloud service

[1]

Question 57

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

In the Service Level Agreement (SLA) the costs are stated and cannot be changed for the duration of the agreement.

True

False

[1]

Question 58

Which of the following would **not** be in a Service Level Agreement (SLA)?

Select the correct answer.

A	Customer responsibilities

B	Data Ownership

C	Duration of agreement

D	Hardware used by the cloud vendor

[1]

Question 59

Which of the following would the cloud vendor be held liable for if it resulted in service disruption?

Select the correct answer.

| A | Failure is caused by a code bug on the customers' machine. |

| B | Ransomware attack on the cloud vendor. |

| C | Third party digging up the road and severing the internet connection. |

| D | Tornado hitting the data centre. |

[1]

Question 60

Why does the data location need to be given in the Service Level Agreement (SLA)?

Select the correct answer.

| A | So that the customer knows what the latency will be. |

| B | So that the customer knows where to take the data to transfer it. |

| C | So that the customer knows where to visit to see the infrastructure. |

| D | So that the customer knows whether the DPA applies. |

[1]

Question 61

If a data breach has occurred, the cloud vendor is required to notify the customer. Which of the following information would **not** be notified to the customer?

Select the correct answer.

| A | The nature of the breach. |

| B | What was taken. |

| C | When the breach occurred. |

| D | Who was responsible for the breach occurring. |

[1]

Question 62

What is the purpose of a data release notification in a Service Level agreement (SLA)?

Select the correct answer.

| A | To ensure that only companies that want the data can have it. |

| B | To ensure that the customer is aware of all the geographic locations where the data will be stored. |

| C | To ensure that the data is not being passed onto a third party. |

| D | To ensure the customer knows who the data is being passed onto. |

[1]

Question 63

The Data Protection Act applies to cloud technology when which of the following is true?

Select the correct answer.

A   The cloud vendor's head office is in the EU or EEA.

B   The data backup is located outside the EU or EEA.

C   The data is collected or processed in the EU or EEA.

D   The data subject is located in the EU or EEA.

[1]

Question 64

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

When data is being transferred to a location outside the EU or EEA the receiving location will have the same data protection regulations as the EU or EEA.

True

False

[1]

Question 65

Which **three** actions are covered by the Privacy and Electronic Communications Regulations (PECR)?

Select **three** actions.

A	Compiling a telephone directory.

B	Marketing by phone, email or text.

C	Providing information on sports results on a website.

D	Using cookies or a similar technology on a website.

[1]

Question 66

Moving to a cloud subscription model allows a company to transition from a Capex (capital expenses) model to an Opex (operating expenses) model.

Read the following financial expenses.

Drag each financial expense (**A-E**), into the appropriate drop zone to indicate whether it could be applied to **either** a capital expenditure (Capex) **or** an operating expenditure (Opex).

Options

B. Purchase of domain registration	C. Purchase of increased cloud storage	D. Purchase of laptop

E. Outright purchase of DBMS	A. Purchase of backup services

Capex

Opex

[1]

Question 67

What is network latency?

Select the correct answer.

A | Distance between the source and destination.

B | Number of dropped packets and resends required in a message.

C | Time delay between video and sound synchronisation is a video message.

D | Time it takes for a data packet to be transferred from source to destination.

[1]

Question 67

Question 68

Data is encrypted by a sender before it is sent to a recipient.

Drag the steps taken to encrypt data from the options below, into the correct order.

Options

| The text is converted to a pre-hash code | The pre-hash code is encrypted using the sender's private key |

The sender of the message retrieves the public key of the person the message is being sent to

The sender's private key would be generated using an algorithm

| The sender encrypts the secret key with the recipient's public key | The message is encrypted using the sender's private key |

1

2

3

4

5

6

[1]

Question 69

Which of the following will **not** prevent data being obtained through shoulder surfing?

Select the correct answer.

A | Covering any pin you enter.

B | Installing a privacy filter.

C | Using biometrics to logon to apps.

D | Using text message verification.

[1]

Question 70

In which cloud service model is the cloud vendor responsible for the physical datacentre?

Select the correct answer.

A	CaaS

B	IaaS

C	SaaS

D	XaaS

[1]

Question 70

In which cloud service model is the cloud vendor responsible for the physical datacentre?

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