

**Cambridge Technicals
IT**

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT

Mark Scheme for June 2019

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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Annotations - These are the annotations to be used when marking Unit 2:

| Annotation | Meaning |
|--|--|
|  | Tick – correct answer |
|  | Cross – incorrect answer |
|  | Plus – use for positives |
|  | Minus – use for negatives |
| L1 | Level 1 |
| L2 | Level 2 |
| L3 | Level 3 |
| BOD | Benefit of doubt (This does count as a mark – so do not ‘tick’ as well) |
| ^ | Omission mark |
| TV | Too vague |
| R | Repeat |
|  or  | Noted but no credit given |

| Question | | Answer | Marks | Guidance | |
|----------|--|--------|---|----------|--|
| 1 | | d | Desktop computers take up a larger physical space than similar devices | 1 | |
| 2 | | a | An ad hoc network can be established between the two devices | 1 | |
| 3 | | d | To make the software more difficult to copy | 1 | |
| 4 | | b | The completed products are more accurate than those produced by human control | 1 | |
| 5 | | c | It automatically provides regular security updates | 1 | |
| 6 | | b | Instant Messaging | 1 | |
| 7 | | a | To collect information from network devices | 1 | |
| 8 | | a | Client virtualisation | 1 | |
| 9 | | a | To allow host identification | 1 | |
| 10 | | b | Report | 1 | |
| 11 | | c | Presentation | 1 | |
| 12 | | c | Phishing | 1 | |
| 13 | | d | Security token | 1 | |
| 14 | | c | Parental controls | 1 | |
| 15 | | c | Disk shredding | 1 | |

Section B

| Question | | Answer | Marks | Guidance |
|----------|-----|---|-------|-----------------------------|
| 16 | (a) | <p>Two marks for each description e.g.</p> <p>Motherboard:</p> <ul style="list-style-type: none"> • A circuit board(1) that connects components of a computer system(1) such as e.g RAM/ROM (1) <p>RAM:</p> <ul style="list-style-type: none"> • <u>Random Access</u> Memory (1) to store data / Instructions temporarily(1) • Volatile (1) memory (1) <p>Hard Drive:</p> <ul style="list-style-type: none"> • Magnetic disk (1) to store data permanently (1) • Can be external/internal (1) | [6] | Max 2 marks per description |
| | (b) | <p>Two from:</p> <ul style="list-style-type: none"> • The Data Protection Act / General Data Protection Regulation (GDPR) (1) • The Environmental Protection Act (1) • The Environment (Waste) Act (1) • Hazardous Waste Directive (1) • Waste Electronic and Electrical Equipment directive (WEEE) (1) | [2] | |

| Question | | Answer | Marks | Guidance |
|----------|-----|--|-------|----------|
| | (c) | <p>One mark for each device marks for each description e.g</p> <ul style="list-style-type: none">• Printer (1)• Monitor (1)• Plotter(1) | [2] | |
| | (d) | <p>One mark for e.g</p> <ul style="list-style-type: none">• Built to user requirement (1)• Unique (1)• No unnecessary features (1)• Any other valid suggestions | [1] | |

| Question | | Answer | Marks | Guidance | | |
|----------|------|--|-------|----------|---|---|
| | (e)* | <p>Indicative Content</p> <p>Benefits</p> <ul style="list-style-type: none"> • Costs • Flexibility • Can be altered/Extended • Support • Values • Security – reviewed and vetted by community • Any other valid suggestion <p>Risks</p> <ul style="list-style-type: none"> • Security – code is viewable – vulnerabilities open • Expertise • Configuration • Maintenance • Any other valid suggestion | [10] | 7 - 10 | 3 | <p>The learner has discussed the benefits and limitation to E5RQ Films of using open source software. More than one benefit and one limitation will have been explained. Subject specific terminology and knowledge will be clearly used to support and inform the discussion. <i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> |
| | | | | 4 – 6 | 2 | <p>The learner has described at least one benefit(s) and/or limitation of E5RQ Films using open source software. The learner is able to make some judgements within the context provided. Some subject specific terminology and knowledge will be used. <i>There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.</i></p> |

| Question | | | Answer | Marks | Guidance | | |
|----------|--|--|--------|-------|----------|---|---|
| | | | | | 1 - 3 | 1 | <p>The learner has identified points about the use of open source software at E5RQ Films. At the bottom of the mark band, the learner may have simply provided a single point. Subject specific terminology may be limited or missing.</p> <p><i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear</i></p> |
| | | | | | 0 | | Nothing worthy of credit. |

| Question | | Answer | Marks | Guidance |
|----------|-----|---|-------|--|
| 17 | (a) | <p>TWO from e.g.</p> <ul style="list-style-type: none"> • Locks (on doors) / Bars on windows (1st) will stop people getting in who don't have a key(1) • Keyfobs/Tokens / RFID (1st) allow only staff who touch a sensor with the fob access(1) • Biometric readers (1st) allows only staff with a fingerprint/retina scan that is on the system to enter(1) • Privacy Screens (1st) will cut down the ability to shoulder surf(1) • Any other Valid response | [4] | <p>To be awarded the description mark, a correct identification mark must have been awarded.</p> <p>Do not accept 'to prevent unauthorised access'- repeat of question.</p> |
| | (b) | <p>First mark for threat, one mark for description of threat e.g.</p> <ul style="list-style-type: none"> • Social engineering (1st) Deception to manipulate a person into giving away confidential information (1) • Phishing (1 st) Deception to manipulate a person into giving away confidential information – often an email (1) • Interception (1st) Capturing data whilst en route(1) • Virus(1st) Malicious software often an executable(1) • Trojan (1st) Malicious software hidden behind software that appears useful(1) • Eavesdropping (1st) real-time interception of private communication(1) | [6] | <p>To be awarded the description mark, a correct identification mark must have been awarded.</p> <p>Malware/ spyware are umbrella terms and are TV</p> <p>DNA Hacking/ unauthorised access in question</p> |

| Question | | Answer | Marks | Guidance | | |
|----------|--|--|-------|----------|---|--|
| 18* | | Level of Response Possible attributes: <ul style="list-style-type: none"> • self-motivation • leadership • respect • dependability • punctuality • problem solving • determination • independence • time management • team working • written, numerical & verbal / communication skills • planning & organisational | [10] | 7 - 10 | 3 | The learner has discussed the possible attributes. More than one attribute will have been explained. Subject specific terminology and knowledge will be clearly used to support and inform the discussion. <i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i> |
| | | | | 4 – 6 | 2 | The learner has described at least one attribute. The learner is able to make some judgements within the context provided. Some subject specific terminology and knowledge will be used. <i>There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.</i> |
| | | | | 1 - 3 | 1 | The learner has identified attributes. At the bottom of the mark band, the learner may have simply provided a single word. Subject specific terminology may be limited or missing. <i>The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear</i> |
| | | | | 0 | | Nothing worthy of credit. |

| Question | | Answer | Marks | Guidance |
|----------|-----|--|-------|---|
| 19 | (a) | <p>Advantages: 2 from:</p> <ul style="list-style-type: none"> Centralisation of control (1) for ease of back up / updates (1) Shared resources (1) e.g printer / files / software (1) Scaleability (1) adding more clients to the network (1) Any other valid suggestion <p>Disadvantages: 2 from.</p> <ul style="list-style-type: none"> Traffic congestion (1) will cause the network to slow down (1) Server fault (1) whole network goes down (1) Technical staff required (1) to manage the network (1) Viruses (1) can travel around the network (1) Any other valid suggestion | [8] | <p>DNA Information as substitute for files / data</p> <p>DNA answers relating to costs for either advantages or disadvantages</p> <p>Accept mix and match of answers.</p> |
| | (b) | <p>Max four marks for a full explanation e.g.</p> <ul style="list-style-type: none"> To store (1) process(1) and deliver(1) web pages using HTTP(1) | [4] | |
| | (c) | <p>Max four marks for a full explanation e.g.</p> <ul style="list-style-type: none"> Optimises hardware (1) one host server (1) to support multiple virtual machines (1) by sharing resources/memory/processing (1) | [4] | |

| Question | | Answer | Marks | Guidance | | | | | | | | |
|----------|--|---|-------|---|---------|------------------------|---------|--|---------|-----------------------|--------|---------------------------|
| | (d) | <p>Max 4 marks for a full explanation e.g.</p> <ul style="list-style-type: none"> • Colours are made up of Red/Green/Blue values (1) • Red/Blue/Green all have different hex values (1) • Intensity of each value scales from 0 to 255 (1) • Means exact colour can be displayed/used/defined (1) • 255 requires only 2 digits of Hex (1) • Less storage required for values (1) • Less processing is needed (1) for searches to be carried out (1) • Using hex allows a developer to use large range/exact colour (1) • E.g. #FFAABB / FF (1) | [4] | One mark for example of hex | | | | | | | | |
| 20 | | <p>Max 4 marks for comparison e.g.</p> <p>PSTN is fixed into position or has limited range where a cellular has a greater range as long as it has a signal.</p> <p>PSTN does not rely on distance from a cell tower for connection but cellular may become unreliable due to distance from the tower/ the environment of the location.</p> <p>PSTN quality of connection rarely an issue where cellular quality can vary due to tunnels/ thick walls / signal blockers</p> | [4] | <table border="1"> <tr> <td>4 marks</td> <td>2 complete comparisons</td> </tr> <tr> <td>3 marks</td> <td>1 comparison + 1 point about either side</td> </tr> <tr> <td>2 marks</td> <td>1 complete comparison</td> </tr> <tr> <td>1 mark</td> <td>1 point about either side</td> </tr> </table> <p>MAX 1 mark if answer in 2 distinct paragraphs.</p> | 4 marks | 2 complete comparisons | 3 marks | 1 comparison + 1 point about either side | 2 marks | 1 complete comparison | 1 mark | 1 point about either side |
| 4 marks | 2 complete comparisons | | | | | | | | | | | |
| 3 marks | 1 comparison + 1 point about either side | | | | | | | | | | | |
| 2 marks | 1 complete comparison | | | | | | | | | | | |
| 1 mark | 1 point about either side | | | | | | | | | | | |

OCR (Oxford Cambridge and RSA Examinations)
The Triangle Building
Shaftesbury Road
Cambridge
CB2 8EA

OCR Customer Contact Centre

Education and Learning

Telephone: 01223 553998

Facsimile: 01223 552627

Email: general.qualifications@ocr.org.uk

www.ocr.org.uk

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OCR (Oxford Cambridge and RSA Examinations)
Head office
Telephone: 01223 552552
Facsimile: 01223 552553

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