

**Cambridge Technicals
IT**

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT

Mark Scheme for January 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 |
| V | Too vague |
| R | Repeat |
|  or  | Noted but no credit given |

| Question | | Answer | Marks | Guidance |
|----------|--|------------------------------------|-------|----------|
| 1 | | A Barcode reader | 1 | |
| 2 | | A External hard drive | 1 | |
| 3 | | B SATA | 1 | |
| 4 | | C Laser | 1 | |
| 5 | | B Smart iron | 1 | |
| 6 | | A Embedded | 1 | |
| 7 | | A Compiler | 1 | |
| 8 | | C Single user multitasking | 1 | |
| 9 | | D Video conference | 1 | |
| 10 | | D Sending packets to the Gateway | 1 | |
| 11 | | B Hybrid | 1 | |
| 12 | | D Subnet mask | 1 | |
| 13 | | A LAN | 1 | |
| 14 | | A Faster upload than download rate | 1 | |
| 15 | | A Sales ordering process | 1 | |

| Question | | Answer | Marks | Guidance |
|----------|-----|--|-------|--|
| 16 | (a) | <p>Possible wireless technologies that could be used to track shoppers as they move through the retail parks include:</p> <ul style="list-style-type: none"> • Bluetooth (1st) pairs devices (within 10m radius) of a receiver (1) • WiFi (1st) can track the user and map which router connected to (1) • NFC (1st) showing where payment is made by contactless readers (1) • RFID (1st) in store card/bag/trolley (1) • Any other valid suggestion. | 4 | <p>1st Mark – Identification of wireless technology. 2nd Mark – Description of the wireless technology</p> <p>The wireless technology must be correct to enable marks for the description to be awarded.</p> <p>NOT cameras</p> |

| Question | Answer | Marks | Guidance |
|----------|--|-------|--|
| (b) | <p>Possible digital security methods that could be used to keep the data secure include:</p> <ul style="list-style-type: none"> • Anti-Virus (1st) to scan and remove virus (1) that could create a weakness that can allow access system (1) • Firewalls (1st) to block access to unauthorised packets (1) so that data cannot be accessed (1) • Anti-Spyware (1st) to prevent spyware (1) so that the system cannot be monitored (1) • Username/Passwords/Authentication (1st) so only authorised users can log on (1) reducing the chances of others accessing the system (1) • Permissions/Levels of Access (1st) so that only authorised users can gain access to a file (1) reducing the chances of others accessing the files (1) • Encryption (1st) scrambles data so it can't be read without (decryption) key (1) so even if gathered cannot be read (1) • Any other valid suggestion. | 6 | <p>1st Mark – Identification of digital security method. 2nd and 3rd Mark – Description of digital security method.</p> <p>The digital security method must be correct to enable marks for the description to be awarded.</p> <p>Do not accept VPN</p> |

| Question | Answer | Marks | Guidance |
|----------|---|-------|--|
| 17* | <p><u>Indicative Content</u></p> <p>Benefits:</p> <ul style="list-style-type: none"> • No need to purchase server hardware • Can build in geo-redundancy as part of the design • Don't need large data centres • Save cost on ancillaries such as power, cooling etc • Can add capacity easily without having to purchase additional equipment • Capacity can be flexible/on demand • Any other valid suggestion. <p>Limitations:</p> <ul style="list-style-type: none"> • Loss of control – servers are not physically under Monty Bella Retail control • Recurring cost of the public cloud. • Don't know exactly where data is • Reliant on someone else keeping the hardware running • Any other valid suggestion. | 10 | <p>Level 3 [7-10 marks] The learner has explained, using examples, benefits AND limitations to Monty Bella Retail of using virtualisation technologies.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the explanations.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p>Level 2 [4-6 marks] The learner has described at least one benefit OR limitations to Monty Bella Retail of using virtualisation technologies. The description may be supported by examples, some of which may be relevant.</p> <p>At the bottom of the mark band, learners may describe generic features of virtualisation.</p> <p><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> <p>Level 1 [1-3 marks] The learner has identified generic points in relation to virtualisation technologies.</p> <p>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> <p>0 marks = Nothing worthy of credit.</p> |

| Question | | Answer | Marks | Guidance |
|----------|-----|---|-------|---|
| 18 | (a) | <ul style="list-style-type: none"> • Switch (1) • Hub (1) | 1 | <i>For one mark.</i> |
| | (b) | <p>Possible ways Monty Bella Retail could use a wired LAN in its retail parks include:</p> <ul style="list-style-type: none"> • Data from stores (1) can be collected and stored centrally (1) • Each user can log on (1) at any store in the centre (1) • Peripherals (such as printers) (1) can be shared between multiple users (1) • Files (1) can be shared/backed up (1) • To send data (1) securely (1) • Any other valid suggestion. | 4 | <p><i>Up to two marks for each of two valid descriptions. Answers need to refer to ways it is used, NOT why it is used.</i></p> <p><i>Do not accept answers that describe how a wired LAN can be set up (Topologies)</i></p> <p>Two from list. MAX two marks per way.</p> |

| Question | Answer | Marks | Guidance |
|----------|---|-------|--|
| (c) | <p>Possible protocols that could be used on the wired LAN include:</p> <ul style="list-style-type: none">• HTTP (1) to transfer web pages (1)• POP (1) to download email messages (1)• SMTP (1) to transfer email between email servers (1)• ICMP (1) for troubleshooting (1)• SNMP (1) to get usage data from devices (1)• FTP (1) to transfer files between hosts (1)• TCP/IP (1) to transport data across a network (1)• Any other valid suggestion. | 2 | <p><i>Up to two marks for valid description.</i></p> <p>Accept TCP or IP on their own</p> |

| Question | | Answer | Marks | Guidance |
|----------|-----|---|-------|--|
| 19 | | <p>Possible types of productivity software Monty Bella Retail could use to manage its business include:</p> <ul style="list-style-type: none"> • Word processor (1) used to create typed documents (1) such as memos to staff/memos to customers (1) • Spreadsheet (1) used to analyse numerical data (1) such as locations of customers in the shopping centre (1) • Database (1) used to store structured data (1) such as customer address information (1) • Email (1) used to send email messages (1) such as promotion information to customers (1). • Any other valid suggestion. | 9 | <p><i>Up to three marks for each of three valid explanations.</i></p> <p>Three from list. MAX three marks per type.</p> <p>Accept brand names</p> |
| 20 | (a) | <p>Why the appropriate use of language is important when justifying the use of new IT to the senior management team includes:</p> <ul style="list-style-type: none"> • When justifying the technology (1) formal language should be used (1) • Formal language should be used (1) as this is a <u>work</u> presentation (1) • Less technical language may be required (1) as some of the senior management team may not understand the technical aspects fully (1) • Any other valid suggestion. | 2 | <p><i>Up to two marks for valid explanation.</i></p> <p><i>Read whole answer and mark to candidates advantage</i></p> |

| Question | Answer | Marks | Guidance |
|----------|---|-------|---|
| (b) | <p>Possible communication skills IT staff should consider when justifying the use of new IT to the senior management team include:</p> <ul style="list-style-type: none"> • Make eye contact (1st) to increase audience interest (1) • Body language (1st) so audience reacts positively to what you are saying (1) • Questioning techniques (1st) to elicit the correct responses (1) • Group discussions (1st) asking the right questions (1) • Noise/ barriers to communication (1st) switch off mobile phones (1) • Speaking clearly (1st) so management team can hear what you are trying to say (1) • Any other valid suggestion. | 4 | <p>1st Mark – Identification of communication skill. 2nd Mark – Description of communication skill</p> <p>The communication skill must be correct to enable marks for the description to be awarded.</p> |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| (c) | <p>Possible ways IT staff can demonstrate that they are ready for work include:</p> <ul style="list-style-type: none"> • Appropriate dress (1st) such as smart dress (1) when giving the presentation to the senior management team (1) • Appropriate dress (1st) when working on hardware (1) so that nothing gets caught in the machines (1) • Presentation (1st) ensuring they are well groomed (1) so others find working with them comfortable (1) • Attitude (1st) have a positive attitude and respond to questions (1) in a polite and helpful manner (1). • Any other valid suggestion. | 6 | <p>1st Mark – Identification of way. 2nd and 3rd Mark – Description of way IT staff can demonstrate that they are ready for work.</p> <p>The way must be correct to enable marks for the description to be awarded.</p> <p>Only award appropriate dress once</p> <p>Do not award ‘punctual’ as it is a contractual obligation</p> |

| Question | Answer | Marks | Guidance |
|----------|---|-------|---|
| 21* | <p><u>Indicative Content</u></p> <ul style="list-style-type: none"> • Security of information • Disaster planning and recovery • Change management • Scale of change • Organisational policies • Any other valid suggestion. | 10 | <p>Level 3 [7-10 marks] The learner has explained the operational issues Monty Bella Retail should consider when moving its IT infrastructure to public cloud providers.</p> <p>Subject specific terminology and knowledge will be clearly used to support and inform the explanations.</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p>Level 2 [4-6 marks] The learner has described the operational issues Monty Bella Retail should consider when moving its IT infrastructure to public cloud providers.</p> <p>At the bottom of the mark band, learners may describe a single point.</p> <p><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> <p>Level 1 [1-3 marks] The learner has identified generic points in relation to operational issues.</p> <p>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> <p>0 marks = Nothing worthy of credit.</p> |

| Question | | Answer | Marks | Guidance |
|----------|-----|---|-------|--|
| 22 | (a) | <p>Possible explanations of the purpose of MIS and CRM systems include:</p> <p>MIS</p> <ul style="list-style-type: none"> • Data about Monty Bella Retail (1) organised to produce management reports (1) to monitor how well the business is running (1) • Any other valid suggestion. <p>CRM</p> <ul style="list-style-type: none"> • Used to develop prospective customers (1) into actual customers (1) by responding to their requests/actions (1) • Manage current customer base (1) ensuring customer loyalty (1) by responding to their needs (1) • Any other valid suggestion. | 6 | <p><i>Up to three marks for each of two valid explanations.</i></p> <p>Max three marks for each system.</p> |

| Question | Answer | Marks | Guidance |
|----------|--|-------|---|
| (b) | <p>Possible types of server Monty Bella Retail could use include:</p> <ul style="list-style-type: none">• File (1)• Mail (1)• Database (1)• Print (1)• Application (1)• Hypervisor (1)• Cloud (1)• Any other valid suggestion. | 1 | <p><i>For one mark.</i></p> <p>Do not accept Client server</p> |

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