Oxford Cambridge and RSA

Cambridge Technicals
IT

Unit 1: Fundamentals of IT

Level 3 Cambridge Technical in IT
05838 – 05842/05877

Mark Scheme for January 2022

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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

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			D	1	Low power consumption
2			D	1	Wireless Access Point
3			B	1	Compiler
4			A	1	Available immediately
5			B	1	Instant messaging
6			B	1	File Transfer Protocol
7			C	1	Hypervisor
8			D	1	Leased Line
9			B	1	Group discussion
10			D	1	Planning and organisation skills
11			B	1	Personal grooming
12			B	1	Organise industrial action
13			C	1	Disaster planning and recovery
14			C	1	Only accessible through one type of device
15			D	1	Username and password

Question			Answer	Marks	Guidance
16	(a)		• Mouse (1st) navigate/ to move lines and shapes (1) • Touchscreen (1st) to draw on screen (1) • Stylus (1st) to colour the characters (1) • Graphics/ drawing Tablet(1st) to draw on Screen (1) • Keyboard (1st) to use shortcut keys/ instruct software (1) • Scanner (1st) to import drawing/ sketches (1) • Any other valid suggestion	**4** (1.1)	Two marks per input device 1st mark identification of the device 2nd mark for description of device DNA description without identification Accept keyboard functions only to do with designing not programming DNA drawing pad Description must be specific to the device identified so generic answers are TV
	(b)		• Low graphics card (1st) to create the games the graphics (1) will be high in demand and most desktop computers would not support them (1) • Low RAM (1) graphics programs need large quantities of RAM (1) to render the graphics (1) • Slow storage device (1st) as graphics will be high quality (1) and require high retrieval speeds (1) • Low amount of storage (1st) as graphics will take up large amounts of data (1) and will need to add more storage (1) • Low processing power (1st) graphics software is process intensive (1) which will slow down the responsiveness of the software (1)	**3** (1.3)	One mark for identification Two further marks for explanation DNA not portable because this is for them using at home DNA anything related to costs Answers relating to the Graphics card also accept GPU
17	(a)		• Device that combines several different technologies (1) such as modem (1) and router (1) switch (1) • Box that has modem (1) wireless router (1) and wired LAN ports (1) in it. • Device containing modem (1) hub (1) and router (1)	**3** (1.5)	Three marks for detailed explanation Be careful with answers that you connect to the internet as this is in the question

Question			Answer	Marks	Guidance
	(b)		• If one-part breaks (1) whole device needs to be replaced (1) • When one-part stops working (1) you cannot easily see which part has stopped (1) • Hybrid devices are not as efficient (1) as single function devices (1)	**2** (1.5)	Two marks for one disadvantage DNA answers related to hacking

Question			Answer	Marks	Guidance
18			**Indicative Content** **Advantages** • Can meet remotely • Reduce travel costs • Reduce time take for meeting • Reduce carbon footprint for SKA • Time and Location issue removed • Can see work/people • Can collaborate on screen with modern tools • Any other valid suggestion **Disadvantages** • High bandwidth needed to show video • Stable connection needed to no cut outs in communication • Short lag time between speaking and getting response • Software may not support many people • Security issues may lead to data leakage • Cost of high quality kit is high • Any other valid suggestion	**10** (2.5)	**Level 3 [7-10 marks]** The learner has explained the advantages **AND** disadvantages of video conferencing to SKA in context. Subject specific terminology and knowledge will be clearly used to support and inform the explanations. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 [4-6 marks]** The learner has described the advantages **AND/OR** the disadvantages of video conferencing to SKA . At the bottom of the mark band, the learner may describe generic aspects of video conferencing methods. *There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.* **Level 1 [1-3 marks]** The learner has identified generic points in relation to video conferencing. Subject specific terminology may be limited or missing. *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.* **0 marks = Nothing worthy of credit.**

Question			Answer	Marks	Guidance
19	(a)		• Reduced costs (1st) enables shared peripheral devices (1) such as printers/ scanners (1) • Shared peripherals (1st) such as printers/ scanners (1) therefore reduces costs (1) • Easier collaboration/ shared resources (1st) creators can share files with each other (1) as they are stored centrally (1) • Improved security (1st) centralised data is easier to protect (1) backup (1)	**6** (3.4)	Three marks for each advantage: 1st mark for identification Two further marks for explanation
	(b)		• Servers manage the system (1) sending programs and data to the client machines (1) • Security is centrally controlled (1) keeping the system more secure (1) • All data is backed up (1) centrally (1) • Covers a small (1) geographic area (1) • All client machines (1) are dependant of the server working properly (1) • Any other valid suggestion	**2** (3.3)	Two marks for full description
	(c)		• Allows the work for different games (1) to be separated (1) so no confusion (1) • Different assets for the games (1) can be stored separately (1) so that they are easier to find/ search and reuse (1) • Any other valid suggestion	**3** (3.1)	Three marks for detailed explanation This question is about a database server. Do not accept generic answers that would apply to other servers e.g. file server
	(d)		• Units of storage (1) that is half a byte (1) • 4 bits (1) that makes up one hexadecimal digit (1)	**2** (1.7)	Two marks for detailed explanation

Question			Answer	Marks	Guidance
20			**Advantages** • Reports can be generated (1st) that can track the progress of the game's development (1) to make sure that it's on schedule (1) • It can identify areas of concern / informs decision making (1st) such as a specific contractor missing deadlines (1) can be seen and dealt with (1) • Resources can be managed (1st) e.g. Areas where increased staffing links to computing time (1) can be monitored and mitigated (1) • Any other valid suggestion **Disadvantages** • Cost (1st) MIS can be expensive to install (1) which could push the cost of the project up (1) • Lack of flexibility (1st) the system may work well for one project development (1) but the system may not work well with the next games development (1) • Expertise required (1st) to configure the system (1) for SKA projects (1) • Misinterpretation of data (1st) by end users (1) for the tracking and development of the games (1) • Data not being updated/ incomplete/ out of date/ human error (1st) when new games are being developed (1) due to poor error checking (1) • Any other valid suggestion	**9** (3.5)	Three marks for each advantage: 1st mark for identification One mark for description One mark for example relating to SKA Three marks for the disadvantage: 1st mark for identification One mark for description One mark for example relating to SKA

Question			Answer	Marks	Guidance
21	(a)		• Self-motivation (1st) so that working remotely (1) they complete the work properly (1) • Dependability (1st) that they are known as being able to fulfil (1) what they are required to on time (1) • Problem solving (1st) to overcome issues developing the game (1) when working remotely from the SKA offices (1) • Any other valid suggestion	**9** (4.3)	Three marks for each personal attribute: 1st mark for identification Two further marks for description *Specification includes the additional following attributes only :* • *Leadership* • *Respect* • *Determination* • *Independence* • *Time management* • *Team working* • *Written skills* • *Numerical skills* • *Verbal skills* • *Planning skills* • *Organisational skills* • *Punctuality*

Question			Answer	Marks	Guidance
	(b)		**Indicative Content** • Codes of practice (Dealing with intellectual property) • Use of information (confidentiality of information about SKA business processes/ new games) • Bias/ discrimination (SKA paying lower wages potentially due to gender/ race)	**10** (5.1)	**Level 3 [7-10 marks]** The learner has explained the ethical issues to be considered AND how these can be addressed. Subject specific terminology and knowledge will be clearly used to support and inform the explanations. *There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.* **Level 2 [4-6 marks]** The learner has described the ethical issues to be considered AND/OR how these can be addressed. At the bottom of the mark band, the learner may describe generic ethical issues. *There is a line of reasoning presented with some structure. The information presented is for the most part relevant and supported by some evidence.* **Level 1 [1-3 marks]** The learner has identified generic points in relation to ethical issues. Subject specific terminology may be limited or missing. *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.* **0 marks = Nothing worthy of credit.**

Question			Answer	Marks	Guidance
22			• Locks on doors (1) • Biometric security of doors/ computers (1) • RFID cards to entry to buildings/ access computers (1) • Tokens (1) • Privacy screens (1) • Shredding of old documents / drives (1)	**2** (5.4)	*One mark for each method* *Accept examples of biometric devices for one mark e.g., iris scanner/ fingerprint scanner* *Do not accept scanner on its own*

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