APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY **9713/13**

Paper 1 Written A **October/November 2017**

MARK SCHEME

Maximum Mark: 80

Published

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This document consists of **7** printed pages.

Question	Answer		Marks
1	Cameras are used to inspect/check work.	✓	**4**
	Sanders are used to produce a shiny finish.		
	Grippers are used to pick up parts.	✓	
	Riveters are used to place and tighten nuts.		
	Screwdrivers are used to place/screw in and tighten screws.	✓	
	Polishers are used to prepare the car body for painting.		
	Sanders are used to paint the car body.		
	Vacuum cups are used to pick up parts.	✓	
	Sprayers are used to weld parts of the car body together.		
	All end effectors have to be changed by a human.		

Question	Answer		Marks
2	An algorithm is a type of computer/microprocessor used for a single process.		**4**
	A PLC has analogue and digital inputs.	✓	
	A PLC is not used in processes which are continuous.		
	There is rarely any input to a PLC from the user once it has been programmed.	✓	
	The PLC causes the PID algorithm to make proportional changes to the temperature.		
	A PLC is used in this process as the pre-set value is constant.	✓	
	A PLC is a type of computer used for many different purposes.		
	The PID algorithm calculates the difference between the input value and the pre-set value.	✓	
	The PID algorithm causes the PLC to switch the heating element on for long periods of time.		
	The PLC does not make use of any sensors.		

Question	Answer	Marks
3	*Batch process control:* Used in paint making process	**1**
	***One** from:* Amounts of raw materials are combined together Mixed for a certain length of time. Amount of each ingredient is controlled by computer Length of time for each stage controlled by computer Used to produce relatively small amounts of a product per year	**1**
	Continuous process control: Used in keeping temperature at 17°C	**1**
	***One** from:* Like a never ending process necessary to maintain a constant temperature	**1**
	Discrete process control: Used in putting wheels/doors/windows on/spray painting	**1**
	***One** from:* Like an on/off or stop/start process The computer control involved in putting components together/painting car is discrete A car is fitted/painted, the next carton comes along, the robot carries out exactly the same task In between cars the robot pauses/stops.	**1**

Question	Answer	Marks
4(a)	=B8*VLOOKUP(C8,$E$3:$G$5,3,FALSE) B8* 1 mark *VLOOKUP (*C8, 1 mark $E$3:$G$5, 1 mark 3, FALSE 1 mark Correct order in VLOOKUP and brackets. 1 mark	**5**
4(b)	***Three** from:* It reduces the time taken to type in the data It reduces the risk of typing errors It makes it easier to validate It reduces the storage space taken up by the spreadsheet.	**3**

Question	Answer	Marks
5(a)	**Four** *from:* Louisa tells sales people the time and date of the conference Louisa books the phone conference with the phone company for that date Louisa is given two PINs by the phone company A personal PIN, the participants' PIN Louisa contacts sales people and tells them the participant PIN Just before the conference Louisa dials the phone number Louisa keys in her special PIN Sales people phone the same number Sales people join the conference by typing in the participant PIN.	**4**
5(b)	**Eight** *from:* With email you are never quite sure if email has been received With phone conference you can be more confident that your message is going to the right person With phone conference feedback is more immediate/it can take longer before you receive feedback from the person you sent the email to With an email you can see/amend/share documents that you want to discuss with each other With a phone conference it is easier to clear up misunderstandings It is more difficult to hear everyone's point of view in a phone conference With emails you are more likely receive replies which are identical without the respondents realising until too late With email you can target confidential material at specific individuals With an email you have more time to reflect on your answers With a phone conference it is more personal Easier to keep an email, can be kept as evidence/audit trail. *One mark is available for a reasoned conclusion.* *Must have at least two advantages and two disadvantages to gain full marks.*	**8**

Question	Answer	Marks
6(a)	Product advertising Advertising of a specific product/advertising individual items They are advertising individual cars.	**3**

Question	Answer	Marks
6(b)	***Four*** *from:* Slide show has range of multimedia – sound, video/ animation unlike flyers Slide show has other features e.g. slide transition effects, special text effects, image transition unlike flyers Slideshow is on while mall is open/the user cannot switch it off/flyers can be thrown away Flyers can target your audience better than a slide show Both are limited to the local area but that is where all their customers are. *Must have comparison **and** contrast to gain four marks.*	**4**

Question	Answer	Marks
7(a)	***Six*** *from:* An easy-to-remember domain name A <u>secure</u> method of accepting payments Descriptions/pricing/photos of cars Usernames and passwords to make the system secure Customers are able to contact shop directly via e-mail Allows customers to see their order and maintain their own accounts Allows customers to track the progress of their order Searches and advanced searches can be carried out easily Customers can move easily to the checkout/navigate from category to category easily Wish lists which enable users to store the cars they might want to buy in the future 'People who bought A also bought B' recommendations Customers can design their own cars using interactive features/cost their customised car.	**6**
7(b)	Part-time working sales people working fewer hours 1 mark Job sharing two sales people doing one job at different times. 1 mark	**2**

Question	Answer	Marks
8	***Eight** from:*	**8**
	Disadvantages:	
	Security concerns about data transmitted over internet such as hacking, phishing, pharming, spyware, viruses, malware (must have two)	
	Description of phishing	
	Description of pharming	
	Description of viruses	
	Can order a car and it does not get delivered/takes time to get car delivered	
	Car is not to the same standard as that ordered	
	Disabled people may have problems navigating through screens	
	Cannot check the standard of car before buying	
	May be hidden costs such as delivery charges	
	Expense of buying a computer with a broadband internet connection	
	Cannot take car for a test drive	
	Advantages:	
	Can shop at a convenient time for them/24/7	
	Customers can spend time comparing cars and prices without being rushed	
	Do not have to spend time queuing/going around different showrooms	
	Do not have to spend time travelling to showroom	
	Physically disabled people do not have to leave house to visit showroom	
	Can look at wide range of showrooms all around the country/world	
	Customers do not have to spend money travelling to showroom	
	Customer might lack confidence talking to a salesman	
	There will be a greater choice of cars.	
	One mark is available for a reasoned conclusion.	
	Must have at least two advantages and two disadvantages to gain full marks.	

Question	Answer	Marks
9(a)	Customer id 1 mark Stock id 1 mark	**2**
9(b)	***Six** from:*	**6**
	Transaction file is sorted into same order as master file	
	Sorted on customer id	
	First record in the transaction file is read	
	First record in the old master file is read	
	These two records are compared	
	If records do not match computer writes master file record to new master file	
	If records match computer calculates the new amount owed	
	Using the current amount from master file	
	Using amount of transaction from transaction file	
	Processed record is written to new master file	
	Process is repeated until end of old master file.	

Question	Answer	Marks
10(a)	*Five* from: The number of tables is decided upon, in this case three Relationship diagrams are designed Fields with unique data are identified… ...customer id and stock id The key field/s is/are chosen The types of relationships between the tables decided upon… ...one to many, many to one… …in this case one to many from customer file to order (transaction) file …one to many from stock file to order (transaction) file Relationships are created/tables are linked… …using key field.	**5**
10(b)	*Four* from: Data is not repeated Less storage capacity needed (If data was duplicated) hackers would have easier access to data Easier to expand the database Data only needs to be amended once Easier to produce reports with cross-tabular data rather than separate files Data integrity is maintained.	**4**

Question	Answer	Marks
11	*Systems – **Three** from:* A detailed overview of the whole system What is expected of the system/purpose of the system Data Flow Diagrams/systems flowcharts The results of systems analysis Test plan and test results Overall design decisions… …the choice of hardware and software …file, input and output structures Systems flowcharts *Program – **Three** from:* Description of the software/purpose of the software Reasons for choosing those pieces of existing software that were used instead of the programmer having to write code Input and output data formats Program flowcharts/algorithms Program listing – a complete copy of the code used… …with annotation explaining what each module of code does Notes that will help any future programmer to make modifications to the system What the software does and its features.	**6**