

Question 6

Answer:

6	<p>To be marked as a level of response:</p> <p>Level 3 (7–8 marks) Candidates will analyse in detail a range of positive and a range of negative implications of the large amount of time spent on social networking sites. The information will be relevant, clear, organised and presented in a structured and coherent format. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 2 (4–6 marks) Candidates will analyse the positive and negative implications of the large amount of time spent on social networking sites. For the most part, the information will be relevant and presented in a structured and coherent format. Subject specific terminology will be used appropriately and for the most part correctly.</p> <p>Level 1 (1–3 marks) Candidates will analyse at least one implication of the large amount of time spent on social networking sites. Answers may be in the form of a list. There will be little or no use of specialist terms.</p> <p>Level 0 (0 marks) Response with no valid content.</p>	8
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Question 6

Answer (Continued):

Examples

Answers may refer to or address, e.g.:

Positive implications

Increased interaction between people:

... allows people to keep in touch more regularly

... people living in cities/countries/continents far apart can keep in contact more easily

... exposing individuals to different cultures

Marketing:

... companies use interactions made over social media to focus on consumers

... customised advertisements allow targeted advertising

Learning:

... children who start using social networking develop communication skills early on

... becoming more literate

... there is a large amount of information freely available on the internet

News sources:

... news channels 'tweet' or give updates on significant news from all over the world

... availability on social networks means news is more accessible

... news is quickly disseminated around the networks so becoming more accessible

Question 6

Answer (Continued):

6	<p><i>Negative implications</i></p> <p><i>Reduction in real contact between people:</i> ... less socialising ... reduction in communication skills at individual level</p> <p><i>Reduced learning capabilities:</i> learners become too reliant on social networking sites resulting in loss of research capabilities ... wastage of time using social networking sites ... results in reduction in academic performance/low grades ... reduced language skills due to use of slang and short word forms ... over reliance on spell checking and grammar check by computers</p> <p><i>Loss of motivation/interest in real world:</i> ... too reliant on the virtual world events and loss of practical knowledge of real world</p> <p><i>Health issues:</i> ... affects on mental and physical health</p> <p><i>Security of personal and financial data issues:</i> ... collection of and distribution/sale of personal information by websites ... invasion of privacy issues ... misuse of financial data for fraudulent purposes</p> <p><i>Advertising issues:</i> ... marketing advertisements aimed at individuals become intrusive ... individuals seen as products by social networking sites</p> <p><i>Political impacts may be presented as positive or negative.</i></p>	
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Question 7, Part (b)

Answer:

7(b)	<p>Award 1 mark for each correct answer up to a maximum of 6.</p> <p>Six from:</p> <p>Large documents can be more easily shared and worked on face to face The discussions of the senior managers/any documents shared would be more secure/less likely to be hacked in a face-to-face meeting Video-conferencing can be less personal than meeting face to face and some meetings need more personal communication it could be possible to misunderstand body language/meaning when the image is not clear Meetings are regular/each week so the video-conference would need to be set up often which would require technical expertise with recurring costs Inconvenience for technical staff having to be available/on call for video-conference each week/on a regular basis As they are on the same site, the company would not need to pay travel/accommodation/hotel expenses for face-to-face meetings so video-conferencing would not be an advantage As they are on the same site, there is no waste of time travelling to meetings so video-conferencing would not be an advantage</p>	6
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Question 11

Answer:

11	<p><i>Eight from:</i></p> <p>Video-conferencing is not appropriate as network connectivity would lead to break up of the conference</p> <p>Video-conferencing is not appropriate as the workers are all on the same site so expensive equipment does not need to be purchased</p> <p>Large documents can be more easily shared and worked on</p> <p>Meetings need to regularly held so video conference would need to be set up often which would require technical expertise with recurring costs</p> <p>Inconvenience for technical staff having to be available/on call for video conference each week/regular basis</p> <p>As they are on the same site, the company would not need to pay travel expenses for face-to-face meetings so video-conferencing would not be an advantage</p> <p>As they are on the same site, there is no waste of time travelling to meetings so video-conferencing would not be an advantage</p> <p>The designs would be less likely to be hacked/stolen/copied.</p>	8
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June 2017 – P32

1 Information Technology enables new methods of working.

(a) Define each of the following:

(i) Video-conferencing:

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Answer:

1(a)(i)	<p>Two from:</p> <p>Simultaneous two-way video and audio communications With two or more participants/locations Using telecommunications networks Via the internet.</p>	2
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(ii) Teleworking:

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Answer:

1(a)(ii)	<p>Use of IT systems/telecommunication systems To work remotely/from home/away from central office</p>	2
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Question 1, Part (b)

(b) Describe the drawbacks to employers of teleworking.

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Question 1, Part (b)

Answer:

1(b)	<p>Five from:</p> <p>Increased costs of providing/maintaining computer equipment and telecommunication links for the teleworkers</p> <p>More difficult to manage the teleworkers so unable to e.g. Motivate/guide them</p> <p>More difficult to monitor the performance of the teleworkers so cannot check on work rate/targets so easily</p> <p>Cannot manage the times/hours of the working environment of teleworkers so cannot tell when they are working</p> <p>Cannot manage the health/safety aspects of the working environment of teleworkers so may be liable for unknown risks</p> <p>Increased security risk to the data/information that is used by/sent to/from teleworkers so must set up secure links/encryption systems</p> <p>Working in different time zones from company/other employees may cause difficulties</p> <p>Some types of work/tasks are unsuitable for teleworking.</p>	5
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Question 11

Answer:

11	<p>Six from:</p> <ul style="list-style-type: none"> Can be organised anywhere/time as long as there is connectivity Can use global resources Can be any language to reflect first language of students Can use any online tools that are available to students/known to students/available in the region Can use peer review/no exam pressures Time zones and physical boundaries can be ignored Can be organised quickly/as soon as you inform the students Learning is/can be in informal surroundings so student more relaxed Can reduce the costs to the college There are no other students to distract the learner Cross-discipline learning is easier/possible Learning can continue beyond the formal time scale of the course Encourages active learning beyond the course requirements Reduces costs to colleges. 	6
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Question 4

Answer:

4	<p><i>Eight from:</i></p> <p>Bank computer uses the account number #65636373 to access the customer record sees that the balance is \$1100 which is greater than \$159... bank computer sends a message confirming that there are sufficient funds for the first purchase Retailer confirms the purchase and an EFT message is sent to the bank to transfer \$159 from customer account to retailer account... ...\$159 is subtracted from customer account ...added to retailer account... ...leaving \$941 in customer account Card reader prints receipt showing details of goods including \$159 which is handed to the customer</p> <p>(Bank computer uses the account number #65636373 to access the customer record) sees that the balance is \$941 which is greater than \$699... ...\$699 is deducted from customer account ...added to second retailer account ...leaving \$242 in customer account</p> <p>(Bank computer uses the account number #65636373 to access the customer record) Account now has insufficient funds to meet the \$300 request by the retail store's system ...returns a message saying 'insufficient funds' for the purchase ...the \$300 purchase is declined and a printout of the 'declined transaction' notice is printed and given to the customer.</p>	8
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Question 6

Answer:

6	<p><i>Eight from:</i></p> <p>Reader communicates via secure wireless connection with restaurant base-station Base station communicates with bank computers Mobile reader reads the data from the card Requests input of PIN from customer PIN checked/validated against stored PIN Request sent to restaurant's bank to determine the cardholder's bank/issuing bank Request sent to card issuer/bank to authorise the transaction ...authorisation code sent to restaurant's bank if credit is available Credit card is validated/credit available ...if valid/available then transaction can proceed ...if not valid/available then transaction is refused If transaction can proceed the amount of the transaction is deducted from the cardholder's account Receipt is printed from the mobile reader</p>	8
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7 Electronic data exchange is often called electronic data interchange. An online retailer and its trading partners use electronic data interchange (EDI).

(a) Define EDI.

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Answer:

7(a)	Three from: The computer-to-computer Exchange of business documents Using a standard electronic format Between business partners	3
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Question 6

Answer:

6	<p>Five from:</p> <p><i>Choice of CPU: CPU 1</i> Reference to CPU 1 running JavaScript faster than CPU 2 Tablets are often used to view web pages Reference to CPU 1 having higher/better score on graphics performance than CPU 2 As tablets are often used to view video/movies Reference to CPU 1 having higher/better score on physics calculation performance than CPU 2 Reference to CPU 1 having a worse/poorer physics calculation performance than its graphics performance ...which does not really matter in this context/use As tablets are not used for/do not need to carry out 'heavy'/intensive gaming/complex modelling.</p>	5
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June 2018 – P32

5 A company sells replacement windows for customers' homes. A salesman visits customers' homes to measure the windows. The salesman usually takes a company laptop on the visit. The salesman is away from the office most of the day. When the salesman is back in the office he has to type up a report on the visit and create quotations to send to the customers. He needs access to a variety of documents including those found on the internet. The salesman also needs to be able to communicate with customers in a variety of ways.

The company managers are considering replacing the laptop with a new smartphone for the salesman to take on the visit.

The salesman has made a comparison of the two devices.

Explain why the salesman has told the company managers that both devices are needed for the visits.

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Question 5 (Continued)

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Answer:

5	<p>Eight from e.g:</p> <p>Laptop has these features required for sales Physical keyboard for typing emails/product but smartphone usually onscreen keyboard Large storage capacity/500GB for local storage of files whereas smartphone has only 32GB/limited file storage Access to external/online storage for file exchange/backup Laptop usually has an optical drive for s/w and product updates whereas the smartphone does not Laptop has greater compatibility of software than a smartphone/can use most features of e.g. office applications</p> <p>Smartphone has these features required for sales people when away from office Smartphone can be used for SMS/text messages Can make voice calls whereas a laptop cannot Smartphone always available/can be carried easily/unobtrusively/smaller than a laptop Smartphone can use 3G/4G whereas laptop is restricted to WiFi/cable Smartphone can be used for internet access by laptop/tethering of laptop to smartphone for internet access Smartphone is not as good at office tasks as a laptop Can connect more readily/to more services Size of device may not be an issue as salesman will use a car/drive to visit.</p>	8
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8 (a) Explain what is meant by digital currency.

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Answer:

8(a)	<p>Two from:</p> <p>Internet-based exchange medium</p> <p>Allows for instantaneous transactions</p> <p>Type of electronic money.</p>	2
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Question 8, Part (b)

Answer:

8(b)	<p>Eight from e.g.:</p> <p>Bank transfers are faster/cheaper than with real currency Leads to increased business activity Movement of money around the globe/world is easier than with real currencies Increase movement of money leads to increase in commerce worldwide People in poor economies can use digital credits on smartphones obviating need to carry real currency/have conventional bank accounts Physically safer than carrying currency so allowing people to retain wealth/money Easier to use for e-commerce so e-business can flourish e-business in underdeveloped countries can easily trade world-wide Allows use of smart contracts/programmable money due by automation/automated systems Linked to e.g. stock markets where money can be paid out depending on movements of share prices/sales Currency does not physically exist/difficult to track/trace transactions Value can fluctuate uncontrollably/without warning/for no apparent reason Susceptible to/used for criminal activities If digital currency is lost through e.g. file corruption it can be lost for ever.</p> <p><i>Max six for all positives or all negatives. 1 mark available for a reasoned conclusion/opinion.</i></p>	8
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Question 9

Answer:

9	<p>Eight from:</p> <p>Students can connect to students all around the world Students see and hear real people in different classrooms Students can collaborate on projects/share resources/ideas Courses can be made available to others Students can attend remotely Students living in remote rural areas can attend school No need to make difficult/lengthy travel arrangements Students can take virtual field trips to dangerous/remote areas in safety Students can experience remote testing by instructor ...before travel to be properly tested ...increasing chance of positive results Students who are home-based through e.g. illness can be included in classes Education does not unduly suffer.</p>	8
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Question 10

Answer:

10	<p>This question to be marked as a Level of Response.</p> <p>Level 3 (7–8 marks)</p> <p>Candidates will discuss in detail the advantages and disadvantages of software-based training methods. The information will be relevant, clear, organised and presented in a structured and coherent format. There will be a reasoned conclusion/opinion. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 2 (4–6 marks)</p> <p>Candidates will explain advantages and disadvantages of software-based training methods. For the most part, the information will be relevant and presented in a structured and coherent format. There may be a reasoned conclusion/opinion. Subject specific terminology will be used appropriately and for the most part correctly.</p> <p>Level 1 (1–3 marks)</p> <p>Candidates will describe the advantages and disadvantages of software-based training methods. Answers may be in the form of a list. There will be little or no use of specialist terms.</p> <p>Level 0 (0 marks): Response with no valid content.</p> <p><i>Answers may make reference to e.g.:</i></p> <ul style="list-style-type: none"> Can learn at own pace Can stop/start at any point Can use multimedia Can choose level of course/learning Progress can be tracked Interactive games/tests available Can set personal targets Can receive feedback/assistance from tutors online Little interaction with other students/learners May not be enough pressure/motivation to meet deadlines parts of course/work may be skipped due to lack of supervision Some learning cannot be done using software e.g. swimming/driving... ...although s/ware can be supportive. 	8
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Question 12

Answer:

12	<p>Eight from:</p> <p>E-business can be more convenient for shoppers No need to travel/saves cost/time of going to shopping malls Reduction traffic congestion/environmental effects of traffic Less time used for ordering/buying goods than visiting a range of shops Greater availability/choice of goods to buy Information about goods is more available/price comparisons can be made more easily Online business can start up cheaper/quicker than conventional businesses so increasing the global economy E-business has created a range of new jobs/employment opportunities/skill sets E-business can operate all the time/24–7 with no shutdown time/shoppers can buy/trade at any time A global marketplace has been set up by e-businesses New marketing models have developed e.g. review forums/online advertising companies Loss of jobs around the world due to closure of conventional business/shops Increase in fraud due to online transactions not being secure Loss of personal contact with supplies leading to loss of confidence in business transactions.</p> <p><i>Max six for all positives or all negatives. 1 mark available for a reasoned conclusion/opinion.</i></p>	8
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Question 1, Part (a)

Answer:

1(a)	<p>Eight from:</p> <p>(Unauthorised persons obtain credit card details by various methods): skimming/interception of details/theft of details from website/phishing Use of number generator to create card numbers close to known good one Last four numbers are usually in a sequential range with same expiry date Use of generated card numbers to make transactions Even if customer not present/if card stolen transactions can still be carried out using security numbers Security number obtained by theft/phishing/selling/smishing by unscrupulous merchants Thieves/hacker use credit card for small transaction to see if valid Once small transaction is successful then much larger transactions are made Subscriptions to web services are a common method to test card validity as nothing physical is purchased Repeat billing/invoicing/recurring charges for card holder An uncancelled 'membership' is charged monthly Use of spyware/keylogger software to capture credit card numbers/details as they are typed.</p>	8
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Question 3

Answer:

3	<p>This question to be marked as a Level of Response.</p> <p>Level 3 (7–8 marks) Candidates will evaluate in detail the impact of the use of robots on the environment. The information will be relevant, clear, organised and presented in a structured and coherent format. There will be a reasoned conclusion/opinion. Subject specific terminology will be used accurately and appropriately.</p> <p>Level 2 (4–6 marks) Candidates will explain the impact of the use of robots on the environment. For the most part, the information will be relevant and presented in a structured and coherent format. There may be a reasoned conclusion/opinion. Subject specific terminology will be used appropriately and for the most part correctly.</p> <p>Level 1 (1–3 marks) Candidates will describe the impact of the use of robots on the environment. Answers may be in the form of a list. There will be little or no use of specialist terms.</p> <p>Level 0 (zero marks) Response with no valid content.</p> <p><i>Answers may make reference to e.g.:</i> More selective/accurate spraying of crops thus diminishing overspray/use of chemicals on crops Remote monitoring of global warming/oil spills/water pollution with use of independent robotic submarines carrying sensors into dangerous areas Autonomous gathering of data in dangerous/hazardous areas to monitor environmental factors Use in food packaging/production by reduction in contamination of product as no human contact Use in industry to reduce environmental waste/resource use... ...e.g. solar panel cleaning robot uses less water than humans ...less energy used in 'dark' factories where heating and lighting are not so important as few humans work in them Leads to reduction in traffic so there is less pollution Negative impacts could include: ...increased use of power over manual labour ...increased use of scarce resources e.g. precious/rare metals to manufacture robots ...environmental damage caused by extraction of precious/rare metals.</p>	8
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7 The table shows part of a database used to control the level of stock items in a clothing store. Reordering is done when the number left in stock reaches or falls below the minimum level allowed by the store management.

Item_Code	Description_of_Item	Item_Price	Current_Stock_Level	Minimum_Stock_Level_Allowed	Quantity_to-be_Reordered
XYP234	Walking boots (pair)	\$128.50	16	15	10
ABG765	Jackets	\$99.56	15	10	15
SCC653	Gloves (pair)	\$36.99	23	20	25
SOX785	Socks (pair)	\$25.99	33	30	50
XYT981	Scarf	\$34.45	16	10	20

A customer purchases two pairs of walking boots, three pairs of socks and a scarf. The items each have a barcode and are scanned at the checkout when purchased.

Describe, in detail, the processes that would occur when the purchases have been made to ensure that the appropriate new orders are placed to maintain the stock levels.

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Question 4

Answer:

4	<p>Six from:</p> <p>Positional commands entered using GUI/text-based commands Specify required X-Y-Z positions 'Lead-by-the-nose' method by one person holding the end-effector and moving to positions... ...with recording of motions/positions Off-line programming to input the positions as code Mapping the positions in graphic format Use of a 'teach pendant'/hand-held control to move end-effectors and program the positions at the same time Robot simulation tools used to replicate and the positions/motion Record the data for programming real robot.</p>	6
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Question 7

7 (a) Describe what is meant by web-conferencing.

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Answer:

7(a)	<p>Two from:</p> <p><u>Real-time</u> collaboration/communication using web browsers between multiple users via/using the internet/network All users see the same screen at the same time in their web browsers Collaborative interaction between users/webinars/webcasts.</p>	2
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Question 9, Part (b)

(b) Give **two** reasons why a student might not be able to use online tutorials.

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Answer:

<p>9(b)</p>	<p>Two from:</p> <p>(Younger) students who are dependent on teachers for learning cannot use online tutorial effectively</p> <p>(Disabled/older/any) students might have difficulty with the technology</p> <p>No access to the internet/computer/IT services due to cost/lack of IT skills/expertise</p> <p>Not enrolled on course/too many students using the tutorial at once.</p>	<p>2</p>
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Question 10

Answer:

10	<p>Eight from:</p> <p>Voters can contact politicians/others with views/post views for others to comment upon so increasing their influence on politicians/government Extremist views/inaccurate/fake news can spread very easily</p> <p>Can (re-)connect with friends very easily/more often Can keep up to date with latest news/developments Difficult to keep views/personal activities secret/private Can become victim of e.g. cyber-bullying/victimisation Have more 'friends' Become more isolated from family/less interaction with others so more vulnerable to external influences/extreme views/radicalisation</p> <p>Less likely to share private/personal/confidential details in case it is shared widely Less trusting of friends in case they share personal details/ inappropriate images/conversations/facts Personal details are published leading to vulnerability to identity theft Background checks by prospective employers can check/reveal (embarrassing) social media postings.</p> <p><i>Max 6 for all positives or all negatives. 1 mark available for a reasoned conclusion/opinion.</i></p>	8
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Question 2

Answer:

2	<p><i>Eight from:</i></p> <p>Bandwidth requirements are higher to allow more detail in video images Video-conferencing requires higher resolution video because there are often several people on screen at once Need to see facial features/body expressions of participants clearly One person to another (when video-conferencing) does not require high resolutions High bandwidth (of 2–4 Mbps) would deliver an (H720p) high definition image for multiple participants Low bandwidth (of 512 kbps) would be sufficient for one-to-one video-conferencing Low bandwidth does not allow high definition images so would not be able to properly see the faces of multiple participants High bandwidth would allow higher frame rates/30fps for smooth motion Limited/low bandwidth requires trade-off between resolution and frame rate Resolution priority for displaying slideshows/documents in detail Motion priority for displaying video presentations.</p> <p><i>Max 6 for all positives or all negatives. 1 mark available for a reasoned conclusion/opinion.</i></p>	8
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Question 12

Answer:

12	<p><i>Eight from:</i></p> <p>Banking is available at any time so financial transactions can occur at any time No issues with banks being closed/international time zones Financial transactions are carried out/confirmed more quickly than at branches/ATMs Accounts can be monitored/used at on different/mobile devices Transactions can be tracked Demand for access to technology/internet increased due to moves to online banking Increase in online banking has led to decrease in number of bank branches/personal customer service Online banking has led to reduction/removal of paper audit trails Online banking has led to increased security threats/issues as a result of phishing/scams.</p> <p><i>Max 6 for all positives or all negatives. 1 mark available for a reasoned conclusion/opinion.</i></p>	8
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Question 11

Answer:

11	<p>Command word: Discuss: give important arguments for and against. Often requires a conclusion, this command word requires 'Analysis' and 'Evaluation'</p> <p>Six from:</p> <p><i>Advantages:</i> First person / heads up display via headsets can enhance monitoring of processes in real time from wearers point of view Can allow enhanced monitoring of employee activity via wearable devices on shop floor Can track every step of activity in manufacturing by employee activity Can allow enhanced / better manufacturing processes via wearable devices that view / transmit live data from activity Faults can be directly entered into fault database / expert system of company Can improve employee safety due to ability to remotely control machinery while on shop floor / using wearable devices Sensors can provide information about environment for working</p> <p><i>Disadvantages:</i> Positioning of devices on body can lead to inaccuracies in the data / actions performed Wearable devices need power so have to carry heavy batteries Wearable devices need charging so have downtime. Staff may not wish to be monitored.</p> <p><i>Max. 5 if all advantages or all disadvantages.</i></p>	6
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November 2019 – P31 & P33

1 An online retailer sells his goods through his website. He has used e-business software to create an online store.

(a) Describe the purpose of a shopping cart within the software.

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Answer:

1(a)	Accumulates goods ready for purchase Calculates total cost of purchases for user to approve/check.	2
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Question 1, Part (b)

Answer:

1(b)	<p><i>Eight from:</i></p> <ul style="list-style-type: none"> Web server software to host the store Database to store information about items being sold Interface for staff to update database of items Search engine to enable customers to search for items Software to enable customers to create accounts Security software to check log in details Security software to authenticate bank details Firewalls to help prevent hacking Backup software to make backups of the database and website Store front view to show customers details of items/products Administration section to allow merchant to manage the online shop <ul style="list-style-type: none"> ... by editing/adding products ... by editing/amending prices ... by managing discounts ... by managing shipping costs Allow appearance/skin to be changed to match shop web site Allow a guest account so customer does not need to create a personal account Allow customer to ship to multiple addresses Provide suggestions for further purchases Allow products to be saved for future use/re-ordering/provide 'wish lists' Provide for return of goods Provide system for customer loyalty reward Database of customer records/details System for online chat/help System for FAQs to be shown. 	8
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Question 5

Answer:

5	<p><i>Command word: Discuss: give important arguments for and against. Often requires a conclusion.</i></p> <p><i>Positive impacts include e.g.:</i></p> <p>Can search for information related to study using internet <u>anywhere/anytime</u> Can search for journals/articles/references without having to visit/book time library/computer room Can be used to set reminders about due dates/times of submission of assignments Helps to avoid using stationery for notes/can dictate/write notes for later reference (during lectures) Use of device to coordinate social activities Can be used to monitor health of student</p> <p><i>Negative impacts include, e.g.:</i></p> <p>Use of smartphones during physical exercise can reduce the benefits of the physical exercise Can be a source of harm to student well-being e.g. constant use, dependency on device reduces personal social interaction Can be a source of distraction from tasks in hand Can be used to harass other individuals Can be used to cheat in examinations Can reduce ability to engage in verbal/face-to-face conversations with others Can create poor behaviour e.g. intolerance/withdrawal from society/social life/aggression towards others</p> <p><i>Max 6 for all positive or all negative impacts. 1 mark available for a valid, reasoned conclusion.</i></p>	8
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9 Compare and contrast the use of a Massive Open Online Course (MOOC) with the use of online tutorials.

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Question 9

Answer:

9	<p>Two from:</p> <p>MOOC and online tutorials both use the World Wide Web MOOC and online tutorials are both interactive using multimedia With both, courses are either bought off-the shelf or custom built Students will learn in isolation i.e.as individuals</p> <p>Four from:</p> <p>MOOC provides interactive user forums whereas online tutorials do not provide these MOOC content can be re-interpreted by students leading to loss of control by the instructors whereas online tutorials are fixed in in their aims/objectives. MOOC covers more content than a tutorial because tutorials are focussed on one/limited topic(s) MOOC are more easily scalable to encompass more content than online tutorials Unlike an online course which focuses more on content, MOOCs focus more on context. Online courses are closed-ended with static content whereas the content in a MOOC evolves dynamically through learner participation</p>	6
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14 Evaluate the impact of holographic imaging on medicine.

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Answer:

14	<p>Four from:</p> <p>Advantages:</p> <ul style="list-style-type: none"> You can see inside the patient without the need for surgery Can look at patient's condition from more angles than using exploratory surgery Can see what's happening with the anatomy while carrying out a procedure Makes training more realistic – three dimensional rather than two <p>Disadvantages:</p> <ul style="list-style-type: none"> Initial cost of the machinery/software required to produce holographs Expense of training technicians/doctors to use software Greater disk storage space is needed than with X-ray images. 	4
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March 2019 – P32

2 (a) Describe the characteristics of online tutorials.

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Answer:

2(a)	Two from: A self-study activity Has a specific learning outcome Delivered via internet/network.	2
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Question 2, Part (b)

- (b) Two types of online tutorial are 'recorded' and 'interactive'. 'Recorded' tutorials do not require user input, but 'interactive' tutorials do.

Describe the differences between these two types of online tutorial.

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Answer:

2(b)	Four from: Recorded tutorial uses video/audio only in a linear sequence/one route through Interactive tutorial is a set of structured (web) pages/slides Navigated by different routes/routes chosen by the learner Interactive can use any combination of text/images/video/audio/animations in any order No user input required in recorded/user input required/mandatory in interactive tutorials.	4
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Question 3

Answer:

3	<p><i>Eight from:</i></p> <p>Social networks provide instant/intermittent reward to human brain so influence behaviours.</p> <p>Use of social networks becomes addictive/distracting so young people waste time/show behavioural changes.</p> <p>Social networks provide instant connection between people/groups of young people which is rewarding/helpful to organise trips/parties.</p> <p>Social networks provides connection between large groups/numbers of people at once/easily.</p> <p>Sharing of ideas/areas of interest reaches many people.</p> <p>Sharing of ideas/areas of interest can influence peoples' choices.</p> <p>Sharing of ideas/areas of interest can make people feel involved/share pictures of holidays.</p> <p>Social patterns can be altered/influenced by sharing on social media.</p> <p>Connections between geographically separated groups can be easier/bring groups together virtually to create/cause social change.</p> <p>Restrictions/limitations of ideas/views of young people through restricted access.</p> <p>Marginal/extreme views can be shared and made available to wider audiences.</p> <p>Increased visibility of ideas/views has moved balance of power from few to many people.</p> <p>Social media allows young people to air views/share ideas without having to engage with society at large.</p>	8
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Question 10

Answer:

10	<p><i>Eight from e.g.:</i></p> <p>Advantages: Accessible from anywhere/can include doctors/researchers from around the world. Interaction between experts from different areas is possible to gain wider opinions/comments. Can develop a group opinion. User groups/moderated comments can increase reliability/reduce offensive/disruptive comments.</p> <p>Disadvantages: Objectivity can be difficult to maintain when discussing medical issues. Can become little more than a group chat about symptoms with no focus. No way of verifying accuracy of comments. Comments can be added at any time. No non-verbal clues about participants are available. Posting of the same comment multiple times can cause dependability/reliability of data issues.</p> <p><i>Must have at least one from each to gain full marks.</i></p>	8
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Question 7

Answer:

7	<p><i>Eight from:</i></p> <p>Advantages: Tissue engineering uses biological materials/cell methods to replace/improve/alter biological structures/tissues with a greater success rate in patients. Tissue engineering uses biochemical techniques to replace/improve/alter biological structures/tissues with a greater success rate in patients. Development/use of substitute materials for tissues has reduced costs. Reduces the need for biological donors e.g. use of artificial blood/skin. Reduces the recovery times for patients. Reduces the risk of tissue rejection. Can produce customised tissues/organs/cells for individual patients. Development/use of artificial organs has increased survival/recovery rates e.g. use of artificial liver/pancreas/cartilage/bone marrow. Religious objections to using donated organs/tissue can be overcome using artificial tissues. Production of artificial meat products reduces environmental impact of animal farming.</p> <p>Disadvantages: Can be very costly to carry out if sufficient base/original material is limited so new material must be developed. May not be sufficient base/original material available for development. Possible inclusion of hidden diseases/conditions in base tissue. Latent diseases are difficult to find with current technology. Ethical issues are difficult to resolve. Can increase the treatment time as tissue can take longer to grow/synthesise.</p> <p><i>Must have at least 1 from each to gain full marks.</i></p>	8
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9 A group of company managers are going to use a web-conference to discuss the documentation about a new product.

(a) The developers already have a desktop computer system.

Describe the additional computer hardware they need in order to participate in a web-conference.

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..... [3]

Answer:

9(a)	<i>Three from:</i> Microphone(s) to capture sounds of voices of developers. Video camera/scanner to capture documentation/diagrams. Speakers to output sounds of voices of developers. (Large) monitor/dual monitor to output video/images of developers/documents. Telephone system with conference call facilities. Specialised collaboration devices/meeting wall with integrated camera/monitor/audio/document sharing devices/systems. Router/NIC to connect to network/internet.	3
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Question 9, Part (b)**Answer:**

9(b)	<p><i>Eight from:</i></p> <p>Application/browser must support HTML/JavaScript/animation/instant messaging/streaming video and audio. Users log into the system/conference. A leader/manager controls the sessions and which documents are viewed. Audio mute/unmute controls participants interaction and volume levels ...use of text chat to discuss documents. Recording of comments from participants for later review. Can include whiteboard facilities to share documents/diagrams. Use of screen-sharing to share document views/control of documents. Can use slideshow presentations with remote mouse control/markup tools. Use of surveys/polls to gather views of participants on documents. Use of screen annotation tools to markup documents.</p>	8
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