

Mid Term
ADM3378M
Electronic Business

Winter 2011, February 17, 7-9pm

Professor David Wright

Time allowed: 2 hours

Closed book exam

KEY

First Name

Last Name

Student Number

Statement of Academic Integrity:

This work conforms to the rules on academic integrity of the University of Ottawa:

Signature

All questions are to be answered on the question paper in the space given.

Answer 4 of the 5 questions.

No additional marks are given for a fourth answer

Point format answers should be given.

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J'ai lu le texte sur la fraude scolaire ci-dessus et je déclare n'avoir ni commis ni tenté de commettre de fraude scolaire dans le cadre de cet examen :

Signature : _____

Note : Un examen ou un cahier d'examen sans cette déclaration signée ne sera pas corrigé et recevra la note de zéro.

1. (a) Give reasons for and against selling luxury goods online.

For	Against
<p>Concise Point Format Answer <i>Tiffany, Prada & others have found it successful. Addresses broader market.</i></p>	<p>Concise Point Format Answer <i>Facilitates comparison shopping. Does not create luxury environment of physical store. Online payment of large sums perceived as risky. Cannot try on expensive clothes.</i></p>

- (b) The dollar value of goods ordered in B2B e-commerce is about the same (within 25%) as the dollar value of goods ordered in B2C e-commerce.

Circle one: TRUE FALSE

- (c) Most goods ordered online in B2B e-commerce are also paid for online.

Circle one: TRUE FALSE

- (d) Which e-business models are used by the following organizations. Give the reason for your choice of e-business model. Give just **one** business model per organization even if more than one business model is possible.

Facebook: Concise Point Format Answer

Community: User loyalty, revenue from advertising

Wikipedia: Concise Point Format Answer

Community: User loyalty, revenue from donations.

The National Post Newspaper: Concise Point Format Answer

Subscription: Usage based billing or monthly subscription.

Gap Clothing Store: Concise Point Format Answer

Merchant/manufacturer: Revenue from sales

TRUSTe: Concise Point Format Answer

Subscription: Web site pays fees month

CIRA, Canadian Internet Registration Authority: Concise Point Format Answer

*Merchant/manufacturer: Sells domain names.
 Subscription/Utility: Pay per year for domain names.*

Intel: Concise Point Format Answer

Merchant/manufacturer

2. (a) Google operates a datacenter in Belgium that uses outside air to cool the servers. What does Google do if the outside air temperature is too hot and the servers start to overheat?

Concise Point Format Answer

Transfers processing to one of their other data centres.

(b) 98% of the electric power in Norway is generated from hydro-electric power plants. In Iceland the percentage of hydro-electric electric power generation is 75% and the percentage of geothermal power electric generation is 24%. Why does Norway outsource its high performance computing to Iceland?

Concise Point Format Answer

*In order to sell electric power with almost zero carbon footprint from Norway to other European countries
In order to create a demand for "green" power in Iceland.*

(c) What are the advantages and disadvantages of locating a datacenter on a ship outside any country's territorial waters? **Concise Point Format Answer**

Advantages of a datacenter on a ship	Disadvantages of a datacenter on a ship
<i>No city taxes No labour laws eg. minimum wage Water cooling Wave power</i>	<i>Pirate attacks. Far from spare parts Storm damage Google owns the patent</i>

(d) What are the advantages of using an "all-optical" network (using optical fibre and optical switching, without any electronic or electrical switches or routers) for collaborative research into curing cancer?

Concise Point Format Answer

*High data rate & hence can share high resolution images/videos
Low environmental impact from lower energy requirement
Less packet loss*

(e) When smart electric meters are installed in residences, what telecommunications technologies can the electric power company use to communicate the readings to their data centre, and what applications can they use the resulting network for?

(i) telecommunications technologies

Concise Point Format Answer

*Mobile / Cellular / 3G
Data over powerline
Wireless mesh
Ethernet*

(ii) applications

Concise Point Format Answer

*Inform users of power usage
Billing
Voltage/phase/power quality monitoring
Outage Notification
Local generation metering
Data analytics
Usage forecasting
Water/gas readings
Real time pricing
Load limits for non-payment
Software update.
Appliance control*

3. (a) Compare and contrast residential broadband access to the Internet using (i) Cable Modem and (ii) Passive Optical Network

Cable Modem	Passive Optical Network
Similarities Concise Point Format Answer Upload data rate lower than download. Data rate shared among all residences	
Differences Concise Point Format Answer Electrical coaxial cable Already installed in many areas May corrode High data rate Shared among many users	Optical fiber New residential areas only. May not corrode. Very high data rate Shared among ≤ 32 users.

- (b) Scotiabank wants to interconnect its branches using a telecommunications network. Should it use (i) a private Internet or (ii) a managed Internet. Give your reasons.

Concise Point Format Answer

Managed internet since it requires good QoS
 it does not have rights of way to lay its own cables.

- (c) Via Rail wants to interconnect its train stations using a telecommunications network. Should it use (i) a private Internet or (ii) a managed Internet. Give your reasons.

Concise Point Format Answer

Private Internet. It can use cables along railway tracks

- (d) How can humans be persuaded to assist computers with handwriting recognition without the humans being paid? **Concise Point Format Answer**

Captchas with two words.
 Open source software development

- (e) Give the name of the telecommunications regulator of the Federal Government of Canada

CRTC Canadian Radio & Telecommunications Commission.

- (f) Compare and contrast an Intranet and an Extranet

Intranet	Extranet
Similarities Concise Point Format Answer Use public Internet. Use AAA servers for authentication Secure using cryptography.	
Differences Concise Point Format Answer Connect sites of a single company AAA server at any site.	Connect a company with its trading partners. AAA server not at trading partner sites.

4. (a) Give current business trends in Virtual Worlds including (i) business applications and (ii) features provided to the business user.

(i) Business applications of Virtual Worlds

Concise Point Format Answer

Training
Health/Safety
Brainstorming/Focus groups
Collaboration
Prototyping
Recruitment
Advertising

(ii) Features provided to the business user by Virtual Worlds

Concise Point Format Answer

Transfer facial expression to avatar
Virtual operations centre
Transfer avatar between virtual worlds
Integration of VW with other applications, eg. video conferencing.

(b) In what ways can companies make money out of users inputting two-dimensional bar codes into mobile phones?

Concise Point Format Answer

Software development.
Charge for each code scanned.
Providing customers with extra info

(c) Some mobile phone users choose to attach air quality sensors to their mobile phones. In what ways can the resulting air quality measurements be used?

Concise Point Format Answer

Monitor total pollution encountered during one day for the user
Build map of city-wide pollution levels from many users
City has info to base decisions on. Alert user if pollution level high. measurements.

(d) Give an example of the use of the "semantic" web, which would be difficult to achieve using today's web.

Concise Point Format Answer

Search engine that knows context of key words, eg. bass for fishing or music enthusiasts.

(e) Describe the 3 types of cloud computing, identifying each by its name in the table below.

Concise Point Format Answer

Name	SaaS	PaaS	IaaS
Description	Users access software that is installed in the cloud	Software developers access operating systems installed in the cloud	Users access hardware (processing/storage) located in the cloud.

5. (a) Compare and contrast the registration of .ca and .com domain names.

.ca	.com
Similarities Concise Point Format Answer Registrars access a master database	
Differences Concise Point Format Answer High cost Each application "eye-balled" Must be Canadian citizen or company with Canadian presence CIRA Can participate in CIRA meetings	Low cost Automated process Anyone can register Verisign

(b) Compare and contrast TRUSTe and CyberTrust

TRUSTe	CyberTrust
Similarities Concise Point Format Answer Logo can be put on web sites Monitor sites regularly Charge fee	
Differences Concise Point Format Answer Monitors privacy	Gives customers confidence in web site. Monitors security. Guarantees compliance with standards legislation.

(c) In non-search-based advertising, compare and contrast (i) buying space on web sites according to the demographics of the visitors to that site with (ii) buying customers according to their browsing history.

Demographics of visitors	Browsing history
Similarities Concise Point Format Answer Targeted advertising Advertiser pays web site owner.	
Differences Concise Point Format Answer Advertiser matches image of web site Match based on demographics of users Requires survey of user demographics Less targeted	May not match Web site checks users browsing history auctions user to advertiser loads winning ad Requires tracking mechanism on web sites More individually targeted.

(d) Internet advertising revenues have grown continuously, year over year, from 2007 to 2010 inclusive. This statement is true of:

CIRCLE ONE (i) USA (ii) Canada (iii) Neither USA nor Canada (iv) Both USA and Canada

(e) Describe current trends in "Open Data". **Concise Point Format Answer.**

Data is being made available in machine readable form and free
 Some governments are providing open data federal/provincial/city.
 Much government data is not open.
 Some companies provide open data.
 Apps are being developed
 - mobile
 - web sites.