Federal University of Technology, Minna
School of Information and Communication Technology
Department of Information and Media Technology. CIT416 (MIS), 2016/17 Session

INSTRUCTION: ANSWER ALL QUESTION

1(a) Explain the term information system (**2 marks**)
(b) Elucidate how information systems are changing business (**2 marks**)
(c) Why do you think information systems are becoming so important in the 21st century? (**1 mark**)
(d) List the six objectives businesses uses information systems to achieve (**3 marks**)

2(a) What are business processes? How are they related to information systems? (**2 marks**)
(b) Why are systems for collaboration and teamwork important? (**2 marks**)
(c) List six technologies that support collaboration and teamwork (**3 marks**)

3(a) In brief, explain how Porter's competitive forces model work (**2 marks**)
(b) Briefly explain four competitive strategies enabled by information systems that firms can pursue (**4 marks**)
(c) Highlight three (3) challenges posed by strategic information systems (**3 marks**)
(d) How can the challenges identified in 3(c) be addressed? (**1 mark**)

4(a) What are ethical, social, and political issues are raised by information systems? (**3 marks**)
(b) List and briefly describe the key technological trends that heighten ethical concerns. (**4 marks**)
(c) Explain the concept of Responsibility, Accountability, and Liability in the context of information systems and technological innovation. (**3 marks**)

5(a) What is IT infrastructure? (**1 mark**)
(b) Describe Moore's Law (**1 mark**)
(c) List the stage of IT infrastructure evolution in chronological order and states its distinguishing features. (**5 marks**)

6(a) List and explain any three problems of the conventional file environment. (**3 marks**)
(b) Explain how they are solved by a database management system (**2 marks**)
(c) Explain the following terms; Normalization, Referential integrity, Business Intelligence, Data warehouse, (**4 marks**)

7 Carefully study the case study below.

Case study: The danger of texting while driving

Cell phones have become a staple of modern society. Nearly everyone has them, and people carry and use them at all hours of the day. For the most part, this is a good thing: the benefits of staying connected at any time and at any location are considerable. But if you're like most Americans, you may regularly talk on the phone or even text while at the wheel of a car. This dangerous behaviour has resulted in increasing numbers of accidents and fatalities caused by cell phone usage. The trend shows no sign of slowing down.

In 2003, a federal study of 10,000 drivers by the National Highway Traffic Safety Administration (NHTSA) set out to determine the effects of using cell phones behind the

wheel. The results were conclusive: talking on the phone is equivalent to a 10-point reduction in IQ and a 0.08 blood alcohol level, which law enforcement considers intoxicated. Hands-free sets were ineffective in eliminating risk, the study found, because the conversation itself is what distracts drivers, not holding the phone. Cell phone use caused 955 fatalities and 240,000 accidents in 2002. Related studies indicated that drivers that talked on the phone while driving increased their crash risk fourfold and drivers that texted while driving increased their crash risk by a whopping 23 times.

Since that study, mobile device usage has grown by an order of magnitude, worsening this already dangerous situation. The number of wireless subscribers in America has increased by around 1,000 percent since 1995 to nearly 300 million overall in 2010, and Americans' usage of wireless minutes increased by approximately 6,000 percent. This increase in cell phone usage has been accompanied by an upsurge in phone-related fatalities and accidents: In 2010, it's estimated that texting caused 5,870 fatalities and 515,000 accidents, up considerably from prior years. These figures are roughly half of equivalent statistics for drunk driving. Studies show that drivers know that using the phone while driving is one of the most dangerous things you can do on the road, but refuse to admit that it's dangerous when they themselves do it.

Of users that text while driving, the more youthful demographic groups, such as the 18–29 age group, are by far the most frequent texters. About three quarters of Americans in this age group regularly text, compared to just 22 percent of the 35–44 age group. Correspondingly, the majority of accidents involving mobile device use behind the wheel involve young adults. Among this age group, texting behind the wheel is just one of a litany of problems raised by frequent texting: anxiety, distraction, failing grades, repetitive stress injuries, and sleep deprivation are just some of the other problems brought about by excessive use of mobile devices. Teenagers are particularly prone to using cell phones to text because they want to know what's happening to their friends and are anxious about being socially isolated.

Analysts predict that over 800 billion text messages will be sent in 2010. Texting is clearly here to stay, and in fact has supplanted phone calls as the most commonly used method of mobile communication.
People are unwilling to give up their mobile devices because of the pressures of staying connected. Neurologists have found that the neural response to multitasking by texting while driving suggests that people develop addictions to the digital devices they use most, getting quick bursts of adrenaline, without which driving becomes boring.

There are interests opposed to legislation prohibiting cell phone use in cars. A number of legislators believe that it's not state or federal government's role to prohibit poor decision making. Auto makers, and some safety researchers, are arguing that with the proper technology and under appropriate conditions, communicating from a moving vehicle is a manageable risk. Louis Tijerina, a veteran of the NHTSA and Ford Motor Co. researcher, notes that even as mobile phone subscriptions have surged to over 250 million during the past decade, the death rate from accidents on the highways has fallen.

Nevertheless, lawmakers are increasingly recognizing the need for more powerful legislation barring drivers from texting behind the wheel. Many states have made inroads with laws prohibiting texting while operating vehicles. In Utah, drivers crashing while texting can receive 15 years in prison, by far the toughest sentence for texting while driving in the nation when the legislation was enacted. Utah's law assumes that drivers understand the risks of texting while driving, whereas in other states, prosecutors must prove that the driver knew about the risks of texting while driving before doing so.

Utah's tough law was the result of a horrifying accident in which a speeding college student, texting at the wheel, rear-ended a car in front. The car lost control, entered the opposite side of the road, and was hit head-on by a pickup truck hauling a trailer, killing the driver instantly. In September 2008, a train engineer in California was texting within a minute prior to the most fatal train accident in almost two decades. Californian authorities responded by banning the use of cell phones by train workers while on duty.

In total, 31 states have banned texting while driving in some form, and most of those states have a full ban for phone users of all ages. The remaining states are likely to follow suit in coming years as well. President Obama also banned texting while driving for all federal government employees in October 2009. Still, there's more work to be done to combat this dangerous and life-threatening practice.

Culled from Laudon and Laudon. Management Information Systems, Twelfth Edition, Prentice Hall.

(a) Which of the five moral dimensions of information systems is/are involved in the this case above (**3 marks**)

(b) What are the ethical, social, and political issues raised by this case? (**3 marks**)

(c) Which of the ethical principles described in the text are useful for decision making about texting while driving? (**3 marks**)