FACULTY/COLLEGE	College of Business and Economics
SCHOOL	School of Consumer Intelligence and Information Systems
DEPARTMENT	Applied Information Systems
CAMPUS(ES)	APB
MODULE NAME	Information Systems 3B
MODULE CODE	ILS3B01
SEMESTER	First
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Final Summative Assessment Opportunity November 2020

ASSESSMENT DATE	2nd NOV 2020	**SESSION**	Online all day
ASSESSOR(S)	Prof Kennedy Njenga		
MODERATOR(S)	Dr Samuel Tope Adeyelure		
DURATION	All day	**TOTAL MARKS**	100

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	5

INFORMATION/INSTRUCTIONS:

- This is an open book online examination.
- Please answer all questions in Section A, Section B and Section C.
- Read the questions carefully and answer only what is required.
- Number your answers clearly and correctly as per the question paper.
- Type legibly.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

SECTION A [25 Marks]

CASE 1: CAVEs and VR

A VR CAVE is a virtual reality space; essentially an empty room in the shape of a cube in which each of the surfaces – the walls, floor and ceiling – may be used as projection screens to create a highly immersive virtual environment. The word CAVE itself is an acronym that stands for Cave Automatic Virtual Environment. According to a report published towards the end of last year by *ResearchAndMarkets.com,* virtual reality is set to have a big impact on the travel and tourism industry in the next few years. As the report's author, Ralph Hollister, explains: "*VR offers the potential to create substitute experiences that may be extremely useful for heritage and natural preservation."* But what will VR travel experiences look like? Well, they'll be categorisable into two basic types: those which simulate tourist experiences anyone with enough money could experience for real, and those which simulate experiences that aren't possible.

One such experience was first launched back in 2018, when French startup FlyView launched a VR attraction enabling tourists to see and feel what it would be like to fly over Paris in a jetpack. A more recent example of such "*impossible VR tourism*" comes from November, when the Four Seasons Resort Oahu at Ko Olina introduced a "*virtual reality wellness experience*" in which participants take a relaxing voyage through deep space, deep oceans and deep caves. This is the more exotic end of the VR tourism spectrum, yet there's an expanding roster of experiences which simply recreate more mundane tourist experiences, as if to remove the need to actually get on a plane.

For instance, in 2018 the Japan-based First Airlines began offering customers the ability to fly to a number of popular destinations in a mock aircraft in VR, something which might be of particular interest to anyone with a fear of flying. Also in 2018, senior citizens began a VR travel club at the Ebenezer Tower Apartments in Minneapolis, allowing them to visit famous tourist spots without leaving the building. And more recently, South Carolina State Parks opened a VR experience where people can hike to the top of Table Rock Mountain, saving not only time, but also potentially the environment.

Virtual Reality and Face Recognition

Banks want to provide better customer experience with the help of cutting edge technology like Virtual Reality (VR). It's important to recognize key customers well before they enter any of a bank's branches for better servicing. Being able to recognize key customers and inform their client relationship manager well in advance will help banks to provide better products & service offerings, based on their portfolio relationship. Being able to analyse customers through facial recognition will help banks to serve and advise them better, so that important financial decisions can be taken. Banks can advise on various products offerings like investments, loan products, wealth management solutions and insurance & credit cards. VR will help banks analyse and recognize their customers in quick time, given the large amounts of customer data that is available across the bank's network.

Question 1

When (and if) CAVEs become a common reality, you'll be able to visit your family and friends anytime you want no matter where they live. What sort of impact will this have on the travel industry? If you can see your relatives in a CAVE as often as you want, will you be more or less inclined to buy a plane ticket and visit them in person? Why or why not?

(10)

Question 2

What are the ethical dilemmas associated with using facial recognition software? Is the use of this type of software by banks really any different from a retail store asking to see your driver's license when you use your credit card? Why or why not? Should the government be able to place digital video cameras on every street corner and use facial recognition software to monitor your movements as banks are doing? Why or why not?

(15)

SECTION B [25 Marks]

CASE 2: SAA Technical

SAA TECHNICAL

South African Airways Technical (SAAT), has over the last 80 years, provided Aircraft Maintenance services to a vast number of commercial airlines in the domestic, regional and international markets. SAAT has particularly been successful in the delivery high quality maintenance services such as; major airframe checks; engine overhaul; mechanical components; avionics and line maintenance. SAAT's main operational base is located in Johannesburg, South Africa, with line maintenance capabilities at most major airports in Africa. SAAT has full support structures comprising of Engineering, Supply Chain, Logistics, Quality Assurance, aircraft painting, major structural repairs, IFE and cabin installations together with an extensive high quality apprenticeship program. SAA Technical embarked on a number of strategic and tactical initiatives to improve its operational and financial performance, specifically in areas of business processes and productivity improvements.

Market

SAAT is in a consolidation phase and is reviewing the market, with a view to redefining its service offering to target high profit, high risk opportunities. Africa remains a strong focus. During the year, SAA Technical established a new line station, in Entebbe, which required minimum capital investment and manpower but generates attractive rates, offers advantageous penetration into African markets and provides visibility for the brand. SAA Technical focused on improving efficiencies to address key factors including:

- Quicker turnaround times in filling of critical positions
- The implementation of AMOS, which went live on 1 April 2017
- Automating the processes for technicians on both Line and Base Maintenance
- Optimising spares support during heavy maintenance checks

- Increasing capability in the back shops adding to the one stop shop methodology

AMOS

The implementation of the AMOS platform will enable SAA Technical to innovate rapidly and enhance its competitiveness in the market. The move to AMOS was a necessity that enabled SAA Technical to move from an outdated, unsupported platform to a much newer, modern software solution, which was to offer opportunities for improved work processes, productivity, and efficiency. The changeover on 1 April 2017 did not come without numerous challenges. These are being managed and reduced. Although this was the first step, the full benefits are still to be realised when the associated improvements are implemented. Maximising the ongoing performance of AMOS and its extended product family incorporating Core, New, Replicator, Mobile, Data Surface and Mail, forms part of a long term and sustainable business strategy. To SAAT, applying best practice, is essential in harnessing the true value and performance of each asset management software solution that operates in conjunction with three major Relational Database Management Systems (RDBMS) in homogenous and heterogeneous environments. These include Microsoft SQL Server (MSSQL), Oracle and SAP SQL Anywhere (ASA). Selecting the appropriate database for the type of application and configuring it in the most effective way will ensure optimal performance of AMOS system. Indeed, AMOS is developed in line with a host of Microsoft technologies that are integrated and supported for Microsoft SQL (MSSQL) Server. This includes a primary cloud deployment strategy based on Microsoft Azure that forms a major part of the AMOS Core solution.

Question 3

In our online class sessions, we discussed important software components of a DBMS: Which of those are most and least important to **users** of a database such as SAAT using AMOS? Which of those are most and least important to **technology specialists** who develop data applications? Which of those are most and least important to the **chief information officer** (CIO)? For each of your responses, provide justification.

(10)

Question 4

Some people in SAAT used to believe that data warehouses would quickly replace databases for both online transaction processing (OLTP) and online analytical processing (OLAP). Having studied at UJ, you know of course, they were wrong. Why can data warehouses not replace databases and become “operational data warehouses”? How radically would data warehouses (and their data-mining tools) have to change to become a viable replacement for databases? Would they then essentially become databases that simply supported OLAP? Why or why not?

(15)

SECTION C [GENERAL QUESTIONS] [50 MARKS]

Question 5

One hotly contested and highly competitive industry is the movie rental business. You can rent videos from local video rental stores, you can order pay-per-view from the comfort of your own home, and you can rent videos from the Web at such sites as NetFlix. Using Porter's Five Forces Model, evaluate the relative attractiveness of entering the movie rental business. Is buyer power low or high? Is supplier power low or high? Which substitute products and services are perceived as threats? Can new entrants easily enter the market? What are the barriers to entry? What is the level of rivalry among existing competitors? What is your overall view of the movie rental industry? Is it a good or bad industry to enter?

(15)

Question 6

The three key resources in management information systems (MIS) are information, information technology, and people. Which of these three resources is the most important? Why? The least important? Why?

(10)

Question 7

Artificial Intelligence (AI) systems are relatively new approaches to solving business problems. What are the difficulties with new IT approaches in general? Say you were selling specialty tea brands and had brick and click stores. Would you use the same type of AI systems for each part of your business? In what way would you use them or why would you not? Is there a place for decision support and artificial intelligence techniques in small specialty businesses? In what way would decision support add value?

(15)

Question 8

Suppose you fully intend to spend the evening working on an Excel assignment that's due the next day. Then a friend calls. Your friend is stranded miles from home and desperately needs your help. It will take most of the evening to pick up your friend, bring him home, and return to your studying. Not only that, but you're very tired when you get home and just fall into bed. The next day your friend, who completed his assignment earlier, suggests you just make a copy, put your own name on the cover, and hand it in as your own work. Should you do it? Isn't it only fair that since you helped your friend, the friend should do something about making sure you don't lose points because of your generosity? What if your friend promises not to hand in his or her own work so that you can't be accused of copying? Your friend wrote the assignment and gave it to you so there's no question of copyright infringement.

(10)