



The University of Fiji



Undergraduate Programme
Department of Computer Science and Mathematics
Semester 1 Year 2018

FINAL EXAMINATION PAPER

ITC103 INFORMATION SYSTEMS IN ORGANISATIONS

Important Instructions to Students:

1. Read the questions, instructions carefully and answer the questions.
2. You are allowed an **extra 10 minutes reading time** (during this time, you are not allowed to write with pen) and **180 minutes (3 Hours) to complete this paper**.
3. Silent, non-programmable calculators are allowed, but not supplied.
4. Write all your answers in the answer booklet provided. If you need extra sheets, please ask from the supervisor. Write your name, course code and student identification number in the answer booklet and in the attendance sheet.
5. This Final Course Examination Paper is worth 100 marks contributes 50% of the total course assessments.
6. This paper contains four (4) sections A, B, C and D. All questions are compulsory to answer.
7. Write all your answers legibly. The marker has the right to award zero for answers that are not legible.
8. This is a **Closed Book Examination**. The University views plagiarism, cheating and dishonest practice as serious offences and if found, offenders are penalized.

Examination Paper Content (Format):

<u>Section</u>	<u>Question</u>	<u>Content</u>	<u>Marks</u>	<u>Suggested Time</u>
A	1-30	Multiple Choice	30	45 minutes
B	1-10	Matching	10	15 minutes
C	1-13	Open-Ended	45	80 minutes
D	1-3	Case Study	15	40 minutes
		TOTAL	100	180 Minutes

Section A – Multiple Choice Questions [30 Marks]

For each question, write the letter representing the best answer in the Answer Book.

Example: 1. A

1. Which of the following describes how a company creates, delivers, and sells its products and services to generate income?
 - A. Business Model
 - B. Computer Literacy
 - C. Database management technology
 - D. Output
2. Which of the following provides the foundation, or platform, on which the firm can build its specific information systems?
 - A. Information Technology (IT)
 - B. IT Infrastructure
 - C. Intranets
 - D. Processing
3. Which of the business functions deals with selling the organisation's products and services?
 - A. Finance and Accounting
 - B. Human Resources
 - C. Manufacturing and Production
 - D. Sales and Marketing
4. Which of the following collaboration tool should you select to support interactions at a different time and different place?
 - A. Decision Room
 - B. E-mail
 - C. Instant messaging
 - D. Learn Room
5. Which of the following professionals is responsible for enforcing a firm's information security policy?
 - A. Chief Information Officer (CIO)
 - B. Chief Knowledge Officer (CKO)
 - C. Chief Privacy Officer (CPO)
 - D. Chief Security Officer (CSO)
6. Which of the following is model that is used to describe the interactions of external influences, specially threats and opportunities, that affect and organisations strategy and ability to compete?
 - A. Competitive Forces Model
 - B. Network Economics
 - C. Switching Costs
 - D. Value Chain Model

7. Which of the following refers to the most successful and established business solutions or problem-solving methods used by a particular organisation or industry?
- A. Benchmarking
 - B. Best Practices
 - C. Strategic Transitions
 - D. Value Web
8. Which of the following trends has raised ethical concerns as cell phones can be tracked without user consent or knowledge?
- A. Computing power doubles every 18 months
 - B. Data storage costs rapidly decline
 - C. Mobile device growth impact
 - D. Networking advances
9. Which of the following describes "the Golden Rule"?
- A. Do unto others as you would have them do unto you.
 - B. If an action cannot be taken repeatedly, it is not right to take at all
 - C. If an action is not right for everyone to take, it is not right for anyone
 - D. Take the action that achieves the higher or greater value
10. Which of the following grants the owner an exclusive monopoly on the ideas behind an invention for 20 years?
- A. Copyright
 - B. Crimes Decree No.44 of 2009
 - C. Patent
 - D. Trade secret
11. Which of the following shows correct chronology of events in IT infrastructure evolution?
- A. Mainframe → Personal Computer → Client/Server → Enterprise Computing → Cloud Computing
 - B. Mainframe → Personal Computer → Enterprise Computing → Client/Server → Cloud Computing
 - C. Personal Computer → Mainframe → Client/Server → Cloud Computing → Enterprise Computing
 - D. Personal Computer → Mainframe → Enterprise Computing → Client/Server → Cloud Computing
12. Which of the following is not a hardware platform trend?
- A. Consumerization of IT and BYOD
 - B. High-performance and Power-saving Processors
 - C. Mobile Digital Platform
 - D. Web Services and Service-Oriented Architecture

13. Which of the following is a type of cloud service where customers use infrastructure and programming tools supported by the cloud service provider to develop their own application?
- A. Infrastructure as a service
 - B. Platform as a service
 - C. Software as a service
 - D. A and C only
14. Which of the following is a database that stores current and historical data of potential interest to decision makers throughout a firm?
- A. Data dictionary
 - B. Data warehouse
 - C. Database server
 - D. Relational database
15. Which of the following supports multidimensional data analysis enabling users to view the same data in different ways using multiple dimensions?
- A. Data cleansing
 - B. Data warehouse
 - C. Entity relationship diagram
 - D. Online analytical processing (OLAP)
16. Which of the following means a group of related field, such as student's name, the course taken, the date, and the grade?
- A. Attribute
 - B. Entity
 - C. Key field
 - D. Record
17. Which of the following refers to a set of rules and procedures that govern transmission of information between two points in a network?
- A. IP address
 - B. LANs
 - C. Nodes
 - D. Protocols
18. Which of the following are very simple devices that connect network components, sending a packet of data to all other connected devices?
- A. Hubs
 - B. Modems
 - C. Routers
 - D. Switches

19. Which of the following internet services supports the function of retrieving, formatting, and displaying information using hypertext links?
- A. E-mail
 - B. Instant messaging
 - C. Telnet
 - D. World wide web
20. Which of the following refers to software vulnerability?
- A. Bugs
 - B. Fraud
 - C. Social engineering
 - D. Unauthorised access
21. What is the name of the process of transforming plain text or data into cipher text that cannot be read by anyone other than the sender and the intended receiver?
- A. Digital certificate
 - B. Encryption
 - C. Packet switching
 - D. Public key infrastructure (PKI)
22. Which of the following refers to the ability to know that a person is who he or she claims to be?
- A. Authentication
 - B. Biometric
 - C. Hacking
 - D. Password
23. Which of the following is not a sales and marketing business process?
- A. Credit checking
 - B. Order processing
 - C. Payroll
 - D. Quotations
24. Which of the following refers to the distortion of information about the demand for a product as it passes from one entity to the next across the supply chain?
- A. Bullwhip effect
 - B. CRM system
 - C. Downstream effect
 - D. Just-in-time strategy
25. Which of the following types of electronic commerce involves retailing products and services to individual shoppers?
- A. Business-to-business (B2B)
 - B. Business-to-consumer (B2C)
 - C. Consumer-to-business (C2B)
 - D. Consumer-to-consumer (C2C)

26. Which of the following is an alternative to consider when building and hosting an e-commerce website?

- A. Completely in-house
- B. Completely outsource
- C. Mixed responsibility
- D. All of the above

27. *Enterprise content management system* is an example of

- A. Enterprise-wide knowledge management system
- B. Intelligent techniques
- C. Knowledge work system
- D. All of the above

28. Information system activities in *knowledge management systems* include acquire, store, disseminate, and

- A. Analyse
- B. Apply
- C. Maintenance
- D. Test

29. Which of the following refers to building an experimental system rapidly and inexpensively for end users to evaluate?

- A. End-user development
- B. Prototyping
- C. Rapid application development
- D. Traditional systems life cycle

30. The more radical form of business change which involves rethinking the nature of the business and the nature of the organization is called

- A. Business process redesign
- B. Paradigm shift
- C. Six Sigma
- D. Total quality management

Section B – Matching [10 Marks]

There are 10 questions, worth 1 mark each.

Write down the letter representing the best match for each question number.

Example: 1. A

- | | |
|---|--|
| <ol style="list-style-type: none">1. Big Data2. Business Processes3. DDoS4. Disruptive Technologies5. Enterprise Software6. M-Commerce7. Moore's Law8. Privacy9. IP address10. TPS | <ol style="list-style-type: none">A. The address of a specific resource on the internet.B. Assertion that the number of components on a chip doubles each year.C. Computerized systems that perform and record the daily routine transactions necessary to conduct the business; they serve the organization's operational level.D. Datasets with volumes so huge that they are beyond the ability of typical relational DBMS to capture, store, and analyze. The data are often unstructured or semi-structured.E. Numerous computers inundating and overwhelming a network from numerous launch points.F. Set of integrated modules for applications such as sales and distribution, financial accounting, investment management, materials management, production planning, plant maintenance, and human resources that allow data to be used by multiple functions and business processes.G. Technologies with disruptive impact on industries and businesses, rendering existing products, services and business models obsolete.H. The claim of individuals to be left alone, free from surveillance or interference from other individuals, organizations, or the state.I. The unique ways in which organizations coordinate and organize work activities, information, and knowledge to produce a product or service.J. The use of wireless devices, such as cell phones or handheld digital information appliances, to conduct both business-to-consumer and business-to-business e-commerce transactions over the Internet. |
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Section C – Open Ended [45 Marks]
There are 13 questions. All are compulsory.

1. Explain the three principle hierarchical levels in a business firm. [3 marks]
2. State five reasons why information systems are so important for business today. [5 marks]
3. Explain the difference in content between *TPS* report, *MIS* report, and *DSS* report. [3 marks]
4. List the 5-steps to carry out an *ethical analysis*. [5 marks]
5. There are seven major components that provide a firm with a consistent *IT Infrastructure*. *Internet Platforms* is one of the seven. Suppliers of Internet Platforms include Apache, Microsoft IIS & .Net, Unix, Cisco, and Java. List five other components from the remaining six and state an example of supplier for each. [5 marks]
6. Why are businesses interested in *big data*? [3 marks]
7. List two types of *physical transmission media* and give brief descriptions of each. [3 marks]
8. Provide an example of crime in which computers are targets and an example of crime in which computers are used as tools of crime. How will you defend a business firm against each crime? [3 marks]
9. Explain the difference between *push-based* and *pull-based* supply-chain models. [3 marks]
10. Explain the term *customer intimacy*, its significance in business, and provide example how IT can assist. [3 marks]
11. Explain the business significance of the following e-commerce technology dimensions [3 marks]
 - a. Ubiquity
 - b. Global reach
 - c. Universal standards
12. Explain with examples, the difference between *tacit* and *explicit* knowledge. [3 marks]
13. List the *core activities* in the *systems development* process. [3 marks]

Section D – Case Study [15 Marks]
All questions are compulsory.

Technology Helps Starbucks Find New Ways to Compete

Starbucks is the world's largest specialty coffee retailer, with over 1,700 coffee shops in 55 countries. For years, Starbucks grew throughout the United States and internationally, opening franchises at an impressive rate. From 2002 to 2007 alone, the company tripled the number of stores it operated worldwide. Starbucks offers a unique experience: high-end specialty coffees and beverages, friendly and knowledgeable servers, and customer friendly coffee shops. This was a winning formula for many years and enabled Starbucks to charge premium prices.

During the economic downturn beginning in 2008, profits plunged. Customers complained that the company had lost its hip, local feel and had become more like a fast-food chain. Many coffee drinkers went in search of cheaper alternatives from McDonald's and Dunkin' Donuts for their coffee fixes. Starbucks stock lost over 50 percent of its value by the end of 2008. Major changes were in order.

Starbucks seized the opportunity to overhaul its business by using several different strategies simultaneously. First, the company has revamped its in-store technology and sought to integrate its business processes with wireless technology and the mobile digital platform. Also, rather than copy the practices of competitors, Starbucks pursued a more aggressive product differentiation strategy, intended to emphasize the high quality of their drinks and efficient and helpful customer service. At the same time, however, Starbucks also focused on becoming 'lean', like many of their competitors, eliminating inefficiency wherever possible.

When Starbucks set out to improve its customer experience, it found that more than a third of its customers are active users of smartphones. The company set out to implement several features and improvements that would appeal to this segment of its customer base. First, Starbucks implemented a technology that allows customers to pay using a smartphone app. The app is integrated with the Starbucks Card system, which allows regular customers to pay with a pre-paid and rechargeable card at any Starbucks branch. When customers make a purchase using the app, a cashier scans a bar code displayed on the phone, and the resulting sale is charged to the customer's Starbucks Card account. Customers report that paying using this app, available for all major smartphone operating systems, is much faster than traditional forms of payment. In its first 15 months of use, the Starbucks mobile payment system processed 42 million transactions.

Many of Starbucks' most loyal customers regularly spend time using the free Wi-Fi wireless network offered in each store. A majority of these customers also use mobile devices to connect to the in-store Wi-Fi networks. Recognizing this, Starbucks launched what it calls the "Starbucks Digital Network," a portal designed specifically for mobile devices as opposed to traditional Web browsers. The site is optimized for all major smartphone operating systems (iOS, Android, and BlackBerry), and responds to the multi-touch capability of devices like the iPad.

The Starbucks Digital Network site was developed in partnership with Yahoo and functions as a content portal. Starbucks customers using the site will receive free Wall Street Journal access, select free iTunes downloads, and a wide variety of other content. The site will integrate with Foursquare, a location-based social networking site for mobile devices. This arrangement will allow users to check in and receive award points using Starbucks' site. Because Starbucks has the most Foursquare check-ins of any company to date, this feature has been popular with customers.

Rather than serve ads on the site, Starbucks has opted to offer the site free of advertising, hoping that striking deals with content providers will make it a profitable venture. Even if the Starbucks Digital Network is not highly profitable, analysts suggest that the site is an effective

way for Starbucks to improve its relationship with its most valuable customers and a creative use of the mobile digital platform to enhance customer satisfaction.

In addition to revamping their business to better serve the needs of their mobile users, Starbucks has made a concerted effort to become more efficient, reduce waste, and use the time saved to provide better customer service. Starbucks set out to streamline the business processes used in each of its stores so that baristas do not need to bend down to scoop coffee, cutting down on idle time while waiting for coffee to drain, and finding ways to reduce the amount of time each employee spends making a drink. Starbucks created a 10 person "lean team" whose job is to travel the country visiting franchises and coaching them in lean techniques made famous by automaker Toyota's production system.

Store labor costs Starbucks about \$2.5 billion, amounting to 24 percent of its annual revenue. If Starbucks is able to reduce the time each employee spends making a drink, the company can make more drinks with the same number of workers or with fewer workers. Alternatively, Starbucks could use this time savings to give baristas more time to interact with customers and hopefully improve the Starbucks experience.

Wireless technology enhanced Starbucks' business process simplification effort. Starbucks district managers use the in-store wireless networks to run store operations and to connect to the company's private corporate network and systems. Starbucks district managers were equipped with Wi-Fi enabled laptops for this purpose. Before the in-store wireless networks were implemented, a district manager who oversaw around 10 stores had to visit each store, review its operations, develop a list of items on which to follow up, and then drive to a Starbucks regional office to file reports and send e-mail. Instead of running the business from cubicles in regional headquarters, Starbucks district managers can do most of their work sitting at a table in one of the stores they oversee. The time saved from going back and forth to regional offices can be used to observe how employees are serving customers and improve their training. Implementing Wi-Fi technology enabled Starbucks to increase the in-store presence of district managers by 25 percent without adding any extra managers.

In 2008 and 2009, the weakened economy forced Starbucks to close 900 stores, renegotiate some rents, cut prices on some of their big ticket items, and begin offering price-reduced specials, such as a breakfast sandwich and a drink for \$3.95. Cost reductions from procedural changes made it possible for Starbucks to offer these lower prices.

Major fast food chains already used these techniques. While some baristas have resisted the changes, and analysts were skeptical that the changes would take hold, Starbucks attributes much of its recent uptick in profits to its efforts to go lean. Starbucks CEO Howard Schultz said that "the majority of cost reductions we've achieved come from a new way of operating and serving our customers," and also added that the time and money saved was also allowing the company to improve its customer engagement. By 2011, Starbucks had returned to profitability and continuing growth, with plans to open 500 new stores, in large part because of the success of each these changes.

(Source: Management Information Systems by Kenneth C. Laudon & Jane P. Laudon, 13th edition, 2014, pp 129-130)

Questions

1. Analyze Starbucks using the *competitive forces model*. [5 marks]
2. What is Starbucks' business strategy and what impact did technology make? [5 marks]
3. How has technology helped Starbucks compete? Explain your answer. [5 marks]

The End