



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 1
MODULE CODE	IFS01B1
SEMESTER	Second
ASSESSMENT OPPORTUNITY, MONTH AND YEAR	Final Summative Assessment Opportunity November 2019

ASSESSMENT DATE	14 November 2019	SESSION	16:30 – 18:30
ASSESSOR(S)	Dr G Barlow-Jones		
MODERATOR(S)	Dr R Brink		
DURATION	2 hours (120 min)	TOTAL MARKS	80

NUMBER OF PAGES OF QUESTION PAPER (Including cover page)	8
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INSTRUCTIONS:

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- Write neatly and legibly on both sides of the paper in the answer book, starting on the first page.
 - Read the questions carefully and answer ALL QUESTIONS.
 - Number your answers clearly.
 - Answer **ONLY** Section 1 multiple choice questions on the scanner sheet provided.
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SECTION 1: ANSWER ON THE PINK MULTIPLE CHOICE SHEET PROVIDED

MULTIPLE CHOICE

Identify the choice that best completes the statement or answers the question.

1. A spontaneous generation process is a process that has _____.
 - a. no input
 - b. at least one output and one input, but the output obviously is insufficient to generate the input shown
 - c. no output
 - d. at least one input and one output, but the input obviously is insufficient to generate the output shown

2. A black hole process is a process that has _____.
 - a. no input
 - b. at least one output and one input, but the output obviously is insufficient to generate the input shown
 - c. no output
 - d. at least one input and one output, but the input obviously is insufficient to generate the output shown

3. A gray hole process is a process that has _____.
 - a. no input
 - b. at least one output and one input, but the output obviously is insufficient to generate the input shown
 - c. no output
 - d. at least one input and one output, but the input obviously is insufficient to generate the output shown

4. _____ is/are logically impossible in a DFD because a process must act on input, shown by an incoming data flow, and produce output, represented by an outgoing data flow.
 - a. Spontaneous generation
 - b. Gray holes
 - c. Black holes
 - d. All of the above

5. A DFD shows _____.
 - a. the detailed contents of a data store
 - b. the data elements
 - c. the specific structure of a data store
 - d. none of the above

6. In a DFD, the Gane and Sarson symbol for a data store is a _____.
 - a. rectangle with rounded corners
 - b. line with a single or double arrowhead
 - c. flat rectangle that is open on the right side and closed on the left side
 - d. rectangle, which may be shaded to make it look three-dimensional

7. In a structure chart, a control couple shows a message, also called a status _____, which one module sends to another.
 - a. pilot
 - b. flag
 - c. loop
 - d. unit

8. In a structure chart, a curved arrow represents a ____, which indicates that one or more modules are repeated.
- a. pilot
 - b. flag
 - c. loop
 - d. unit
9. A module that performs a single function or task has a high degree of ____, which is desirable.
- a. piloting
 - b. indexing
 - c. cohesion
 - d. resolution
10. In a structure chart, a(n) ____ line, which has a diamond on one end, indicates that a control module determines which subordinate modules will be invoked.
- a. method
 - b. condition
 - c. class
 - d. attribute
- Answer _____
11. ____ describes the relationships and interdependence among modules.
- a. Resolution
 - b. Modularity
 - c. Dynamism
 - d. Coupling
12. In sequence, the four steps typically followed to create a structure chart are ____.
- a. review the DFDs; identify modules and relationships; add couples, loops, and conditions; analyze the structure chart and the data dictionary
 - b. identify modules and relationships; add couples, loops, and conditions; analyze the structure chart and the data dictionary; review the DFDs
 - c. add couples, loops, and conditions; analyze the structure chart and the data dictionary; review the DFDs; identify modules and relationships
 - d. analyze the structure chart and the data dictionary; review the DFDs; identify modules and relationships; add couples, loops, and conditions
13. The testing of an individual module is called ____ testing.
- a. modular
 - b. index
 - c. stub
 - d. unit
14. In a technique called ____ testing, the programmer simulates each program outcome or result and displays a message to indicate whether or not the program executed successfully.
- a. modular
 - b. stub
 - c. outcome
 - d. unit
15. Integration testing is sometimes known as ____ testing.
- a. unit
 - b. modular
 - c. link
 - d. outcome
-

SECTION 2: ANSWER THIS SECTION IN THE ANSWER BOOK PROVIDED

QUESTION 1: Phase 1 – Planning

Systems' planning is the first of five phases in the systems development life cycle.

- 1.1 Structured analysis is a traditional systems development technique that is easy to understand. Structured analysis uses a series of phases, called the systems development life cycle (SDLC). In the waterfall model, the result of each phase is called a deliverable which flows into the next phase. What is the deliverable for each of the following phases:

(5)

- a) Planning
- b) Analysis
- c) Design
- d) Implementation
- e) Support

- 1.2 A constraint is a requirement or condition that the system must satisfy or an outcome that the system must achieve. When examining constraints, their characteristics should be identified as follows:

(5)

Present (P) vs Future (F)
Internal (I) vs External (E)
Mandatory (M) vs Desirable (D)

Identify whether the following constraints are (P) or (F), (I) or (E), (M) or (D).

Instructions: Answer the question like this – Example:
(A) The new and improved UJ library website must be operational by 1 December 2020 as stated by the UJ Registrar.
Answer (A) = (P)(I)(M)

- a) A new Government data must be used in the payroll system as soon as possible.
 - b) Sometime next year, our largest customer will require a security code for all online transactions.
 - c) Management prefers that the project be completed now, rather than within the next four months.
 - d) Starting next week, the marketing system must track all repeat visits to the website.
 - e) To reduce raw material costs, we should build supply chain management capability into the next version of our purchasing system.
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QUESTION 2: Phase 2 – Analysis

Systems analysis is the second of five phases in the systems development life cycle.

2.1 Case Study: Westwood College

The school is considering a new system to speed up the registration process. As a member of Westwood's IT team, you will interview stakeholders affected by the registration process.

Tasks:

- a) Which seven steps will you follow to ensure that the interviews are carried out properly? (7)
- b) Discuss the two most common disadvantages of interviews. (2)
- c) What fact finding method would be a better option than doing interviews? (1)

2.2 Case Study: Globe Consulting

You are a senior systems analyst at Globe Consulting, a growing IT consulting firm. You are leading the development team for a major client. You need to check whether your two newly hired junior analysts (Jack and Jill) understand Data Flow Diagrams before meeting with the client tomorrow afternoon. You give your junior analysts the following Diagram 0 for an Ordering System and ask them to draw the Context Diagram for the Ordering System. What should their Context Diagram look like? (10)

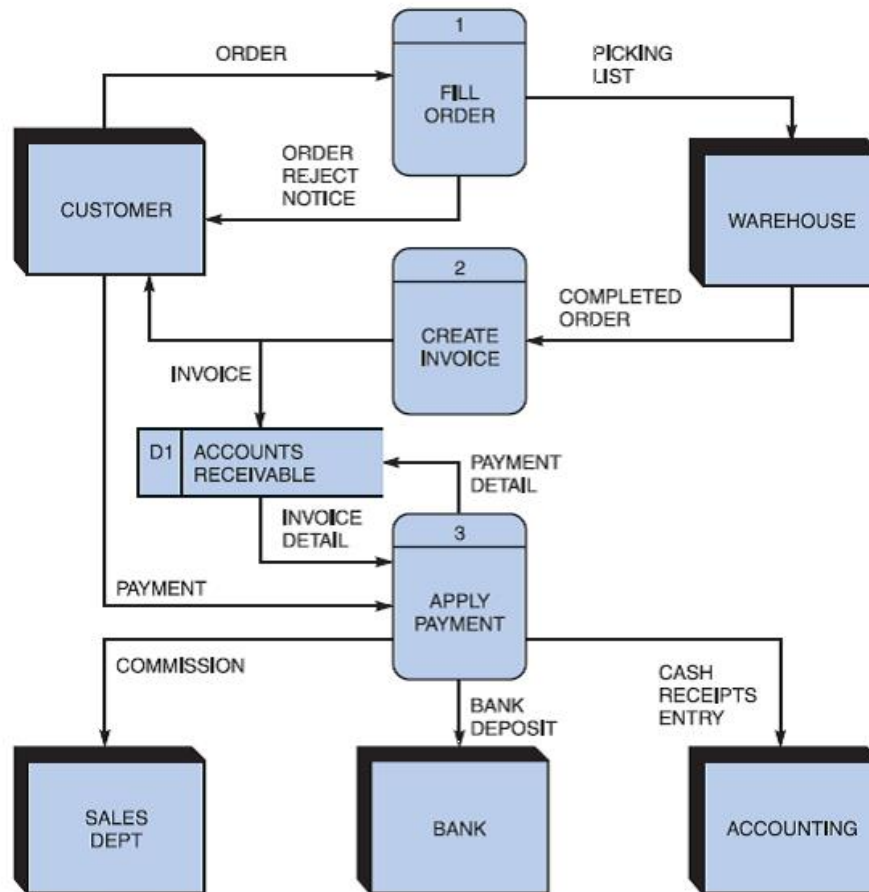


Diagram 0 DFD for the order system.

2.3 **Case Study: Atrium Bio-Medical Supply, Inc.**

Atrium Bio-Medical Supply is a medium sized regional supplier of medical and laboratory equipment. Since starting the company 12 years ago, Victoria Dawn has built Atrium into a competitive supply company across several metro areas, but her growth potential is limited because the firm does not have an integrated sales and logistics system. Victoria asked you to evaluate Atrium's options for acquiring a new system.

Tasks:

- What options does Atrium have for acquiring a new system? (3)
- What are the pros (advantages) of in-house development versus purchasing a system? Please use a table like the one shown below to answer the question. (12)

In-house Development	Purchasing

QUESTION 3: Phase 3 – Design

Systems design is the third of five phases in the systems development life cycle.

3.1 A data validation check/rule improves input quality by testing the data and rejecting any entry that fails to meet specified conditions. Name the following data validation checks/rules. (5)

- a) An out-of-sequence order number indicates an error, (Eg. 1, 2, 3, 5).
 - b) An employee record requires an ID number.
 - c) The daily hours worked by an employee, must fall within the range of 0 to 24.
 - d) A numeric field must have only numbers or numeric symbols, and an alphabetic field can contain only the characters A through Z (or a through z).
 - e) A daily hour's worked value of 24 passes a 0 to 24 range check; however, the value seems unusual, and the system should verify it by using this test.
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QUESTION 4: Phase 4 – Implementation

System implementation is the fourth of five phases in the systems development life cycle.

4.1 Case Study: Rachel's Day Off Swimwear

Rachel's Day Off Swimwear is a successful chain of high end swim suit boutiques. Recently, several smaller shops and boutiques were acquired to expand its operations. The new company is much larger than the original company and it has outgrown its accounting software. The original accounting system was a package from Peachtree Software, which initially ran on a stand-alone PC and later on a network. Now, the firm is preparing to install a powerful, scalable accounting package that can support the company's current and future operations. You have been asked to implement the new system.

Tasks:

- a) Discuss the four different changeover strategies that you can implement for the new accounting system. (4)

- b) When should a post-implementation evaluation be conducted? Explain your answer.

(1)

QUESTION 5: Phase 5 – Operation, Support and Security

Systems operation, support and security is the final phase in the systems development life cycle.

- 5.1 Initial training must be performed when a new system is introduced. Additionally, new employees must be trained on the company's information systems. If significant changes take place in the existing system or if a new version is released, the IT department might develop a user training package. What should be included in the training package

(5)

- 5.2 Match the column. Identify the best matching name from the list below for the description given: **Please answer the question e.g. a) = C.**

(5)

a) spy	b) hacker	c) back door	d) mail bombing
e) dumpster diving	f) password cracking	g) script kiddie	h) spam
i) sniffing	j) spoofing	k) hacktivist	l) phishing

- a) Enormous volumes of email are sent to a target address.
- b) Attacker scours the trash for valuable information that can be used to compromise the system.
- c) Attacker finds vulnerability in software package and exploits it.
- d) Unwanted useless email is sent continuously to business email accounts, wasting time and decreasing productivity.
- e) IP address is forged to match a trusted host, and similar content may be displayed to simulate the real site for unlawful purposes.

TOTAL: 80