UGANDA MARTYRS UNIVERSITY

UNIVERSITY EXAMINATIONS

FACULTY OF SCIENCE

DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS

END OF SEMESTER FINAL ASSESSMENT

SEMESTER II, 2022

YEAR II EXAMINATION FOR DIPLOMA IN COMPUTER SCIENCE AND IT

INTRODUCTION TO SYSTEM ANALYSIS AND DESIGN
DIPS 2105

DATE: 18TH JANUARY, 2022

TIME: 9: 30AM- 12:30 PM

DURATION: 3Hrs

Instructions:

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1. *Carefully read through ALL the questions before attempting*
2. ***ANSWER ONLY FOUR (4) Questions*** *(All questions carry equal marks)*
3. *No **names** should be written anywhere on the examination book.*
4. *Ensure that your **Reg Number** is indicated on all pages of the examination answer booklet.*
5. *Ensure your work is **clear** and **readable**. Untidy work shall be penalized*
6. *Any type of examination Malpractice will lead to automatic disqualification*
7. *Do not write anything on the questions paper.*

Question One

a. Illustrate the difference between Analysis and Design? (2 Marks)
b. A system requires a lot of planning than implementation. Discuss (8 Marks)
c. Explain the advantages of using systems analysis and design techniques in approaching the development of computerized information systems for businesses. (10 Marks)
d. Why would a systems analyst be hired in an organization? (5 Marks)

Question Two

a. Elaborate on the Systems Development Life Cycle (SDLC)? (2 Marks)
b. Explain the activities involved in the first stage of the SDLC? (10 Marks)
c. Describe any four (4) situations under which a systems analyst may choose to use the prototyping methodology other than the waterfall approach (8 Marks)
d. Discuss the reasons for consideration of the candidate system. (5 Marks)

Question Three

a. What is requirements determination? (2 Marks)
b. Explain the activities involved in requirements determination? (6 Marks)
a. Why user involvement throughout the systems project is necessary? (10 Marks)
b. With the help of examples, explain the difference between functional and non -functional system requirements. (4Marks)
c. Give any three techniques used in requirements gathering (3 Marks)

Question Four

a. Why would a system analyst undertake a feasibility study? (2 Marks)
b. Write short notes on any five types of feasibility studies (10 Marks)
c. Briefly describe the steps involved in feasibility analysis (10 Marks)
d. Discuss the underlying issues that may result into a project's termination prior to its implementation (5 Marks)

Question Five

a. Data analysis and system investigation are a prerequisite to cost/benefit analysis and they result into an assessment of the current findings. What are some of the benefits that may be envisioned in the candidate system after undertaking the above processes? (5 Marks)

b. UMU is considering two new Information Systems that should produce considerable cost savings in its assembly operations. The cost of each System is $14,000 and none of the system is expected to have a salvage value at the end of a 4-year useful life. UMU's required rate of return is 12% and the University prefers that the project returns its initial outlay within the first half of the project's life. The annual after-tax cash savings for each System are provided in the following table:

Year	System A	System B	System C
1	$5,000	$8,000	$7,000
2	5,000	6,000	5,500
3	5,000	4,000	4,000
4	5,000	2,000	3,000
Total	**$20,000**	**$20,000**	**$19,500**

quired:

a) Compute the payback period for each System (6 Marks)
b) Compute the net present value for each System. (12 Marks)
c) Which System should UMU purchase and why? (2 Marks)

Question Six

a. Explain what is meant by prototyping and why it is used in systems development. (2 Marks)
b. Explain the differences between throwaway prototyping and system (or evolutionary) prototyping and how each approach is used in systems development. (6 Marks)
c. What is testing in regard to system development and which phase of the SDLC is it done? (3 Marks)
d. Describe the different types of testing used in system development (8 Marks)
e. Write short notes on the following terms: (6 Marks)
   i. System validation
   ii. System verification
   iii. System evaluation

Question Seven

a. What is structured analysis? (2 Marks)
b. What are structured analysis tools and list some of them? (5 Marks)
c. Clients borrow videos from the Video Library. The Library has many DVD's, when clients come to the library they can request a DVD to be issued. Staff checks the library catalogue to see if the DVD is available and not on hold for another client. If the DVD is not on hold it is issued to the client for a period of 2 or 7 days. Clients pay for borrowing the video after it is returned to the library. Draw a Data Flow Diagram for the Video Library System described above. (10 Marks)
d. Draw a context diagram for the Video Library System above. Show the Library System as a single process. List all the related entities and the data flows in and out of the system. (8 Marks)

Wish you good luck