UNIVERSITY OF EDUCATION, WINNEBA
INSTITUTE FOR TEACHER EDUCATION AND CONTINUING
PROFESSIONAL DEVELOPMENT (ITECPD)

END OF SECOND SEMESTER EXAMINATIONS, OCTOBER, 2024

LEVEL: 200
COURSE CODE: JBT 242
COURSE TITLE: APPLICATION DEVELOPMENT IN EDUCATION

TIME ALLOWED: 2 HRS

STUDENT'S INDEX NUMBER:

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GENERAL INSTRUCTIONS:
- This paper is made up of **ONE SECTION**.
- *The Section is made up of five essay type questions.*
- *Answer any THREE questions in your answer booklet.*
- *Each question carries equal marks. You are expected to start each question on a new page.*
- *You will need manuscript sheets for this paper.*
- *You are expected to hand over your answer booklet to the invigilator before you leave the examination hall.*

Instruction: *Answer any three (3) questions in the answer booklet provided.*

1. You are leading a software development team that is halfway through developing a web-based inventory management system for a medium-sized business using the Waterfall SDLC model. The client has just requested significant changes to the system's functionality, which were not part of the original scope. Explain the challenges you may face in accommodating these changes at this stage of the project using the Waterfall model. How would you adjust your approach to handle

these new requirements while minimizing project delays and maintaining the integrity of the system?   **20 marks**

2.

    a. Discuss the potential drawbacks of using the Prototype model in a large-scale project.   **5 marks**

    b. How does Agile methodology prioritize flexibility and customer collaboration?   **5 marks**

    c. Discuss the concept of 'sprints' in Agile development.   **5 marks**

    d. Explain **two (2)** key differences between RAD model and Incremental mode   **5 marks**

3.

    a. Imagine you are leading a team to introduce a new learning management system (LMS), but there are concerns about how it will be accepted by staff.

      i. Explain how you would assess the operational feasibility of the LMS.

                                               5 marks

      ii. What strategies would you consider to ensure a successful adoption of the new LMS?   **5 marks**

    b. As a system analyst, you conducting a requirements analysis of a new LMS.

      i. Explain the difference between functional and non-functional requirements, providing examples of each in the context of the LMS.   **6 marks**

      ii. How would failing to capture either type affect the project?   **4 marks**

4.

a. For staff and students to understand better the grading workflow in the new LMS, you have been tasked to develop a flowchart to give a visual representation of the process from assignment submission to grade publication.

    i. Draw a flowchart and explain how you would use same to represent this process, including the key symbols or elements you would use to clearly communicate the decision-making points. **15 marks**

    ii. Why are flowcharts helpful in explaining the logic of a grading system? **5 marks**

5.

  a. Describe the concept of control structures in programming, specifically focusing on conditional statements and loops. **4 marks**

  b. Provide examples of how these structures can be used in a C++ program to manage decision-making and repetitive tasks. **8 marks**

  c. Write pseudocode for a program that calculates the sum of all even numbers between 1 and 100 **8 marks**