UNIVERSITY EXAMINATIONS: 2026/2027

PAN AFRICA CHRISTIAN UNIVERSITY

END OF SEMESTER EXAMINATION FOR THE DEGREE OF

MAY- AUGUST 2026

OPERATIONS MANAGEMENT

END TERM EXAMINATION

DATE: AUGUST, 2026 **TIME: 3 HOURS**

INSTRUCTIONS: Question One is Compulsory, Choose Three Other Questions

USE THE CASE STUDY BELOW TO ANSWER QUESTIONS SECTION A

2017 YOUNG ACHIEVER OF THE YEAR

Resourceful Doris Legodi of Seshego Pharmacy has been chosen as Southern Sun Life/Enterprise's Young Achiever of the year for 2017. Doris, 25, was born and educated in Seshego. As a young woman she spotted a gap in the local service industry: a neighbourhood pharmacy where black people will be served in their own mother tongue.

The secret of her business success is the high level of personalised service she renders. Not only does she counsel customers on their health problems, she also personally delivers medication to people's homes in her private vehicle. She also keeps her pharmacy open until nine at night.

Doris opened her pharmacy in November 2015 and in a short period of time gained the confidence of Seshego residents. I feel that I have broken new grounds,' she says. 'People appreciate the importance of a pharmacist in the townships. They now understand that a pharmacist is the most accessible healthcare official to give free advice on health-related issues.

When asked about the success of her business, Doris indicated that she work with a team of young people who pursue service excellence. They develop weekly plans together, develop strategies to deal with risks, and always strive for quality in everything the pharmacy does. Doris wants to have more than 1 000 customers by the end of 2020 and she is aware that she will have to work very hard to exceed the expectations of all the stakeholders to realise this goal.

SECTION A (COMPULSORY)

QUESTION ONE Compulsory (15 Marks)

The secret to the success of Doris Legodi's Seshego Pharmacy is the high level of personalised service she renders in striving for excellence in everything she does.

a. Explain Doris's duties as the operations manager of Seshego Pharmacy. (5 marks)
b. Give FIVE examples of the human resources required for the successful execution of the weekly action plan of the pharmacy. (5 marks)
c. Explain the incentive schemes which Doris can introduce to achieve better cooperation and commitment from team members (5 marks)

SECTION B

(ANSWER ANY THREE (3) QUESTIONS IN THIS SECTION)

TUCSON PARKS

Background:
The Tucson Parks and Recreation Department manages city parks, pools, and community programs. Funded by taxpayers, the department operates under strict city budgets, rigid civil service labor laws, and high public scrutiny.

The Challenge:
Demand is highly seasonal. It peaks sharply in summer (June–August) when schools are out and pools open, but drops drastically in winter (November–January). Because services are perishable (unsold pool space cannot be inventoried) and inseparable (staff must be present when citizens arrive), the department cannot use inventory to smooth out demand.

Demand Curve:



The Choices:
The Superintendent must pick one of three aggregate planning options for the upcoming fiscal year:

1. Present Method: Maintain a small core of full-time staff and hire hundreds of seasonal, part-time workers for the summer peak.
2. Subcontracting Approach: Hire a minimal skeleton crew and outsource all summer programs and maintenance to private commercial vendors.
3. Constant Workforce: Maintain a large, uniform team of permanent, full-time city employees year-round to handle peak summer crowds internally.

USE THE CASESTUDY ABOVE TO ANSWER QUESTION TWO AND THREE

QUESTION TWO (15 marks)

a) Explain why aggregate planning is particularly challenging for service organizations like the Tucson Parks and Recreation Department. Consider the nature of services (intangibility, perishability, inseparability, variability) and how they apply to this case. (5 marks)

b) For each of the three aggregate planning options available to the department (present method, subcontracting approach, constant workforce), identify the key advantages and disadvantages (6 marks)

c) Discuss which of the three options would you recommend to the department. Justify your recommendation by considering the unique characteristics of a public service organization (e.g., civil service rules, public image, seasonal demand, budget constraints). (4 marks)

QUESTION THREE (15 marks)

a. The case uses "Full-Time-Equivalent (FTE) positions" as a measure of output/input. Discuss
   i. the advantages
   ii. The limitations

   of using such an aggregate measure for planning in a service organization. (5 marks)

b. The department employs three distinct groups of full-time employees. Explain how the existence of these three groups complicates the aggregate planning process. How could the department better integrate these groups into a cohesive workforce plan? (5 marks)

c. Suppose the department chooses to implement a "level capacity" strategy (Option 3: constant workforce with varying utilization). Explain two specific challenges they would face during peak summer months and two specific challenges during off-peak winter months. How would you propose to mitigate each of these challenges? (5 marks)

QUESTION FOUR (15 marks)

a. Define "Total Quality Management (TQM)." (2 marks)
b. Explain the interrelationships of the following category of quality costs
   i. prevention,
   ii. appraisal
   iii. internal failure
   iv. external failure (8 marks)
c. Explain how each of the following tools are used in quality control:
   i. flowcharts,
   ii. Checklists
   iii. control charts
   iv. scatter diagrams,
   v. Pareto analysis (5 marks)

QUESTION FIVE (15 marks)

A manufacturing factory is undergoing an expansion. Formulate a set of design considerations for optimizing the electrical power distribution within the expanded factory layout to enhance efficiency, safety, and maintainability. (15 marks)

QUESTION SIX **(15 marks)**

a. Evaluate the strategic implications of adopting a "lag capacity strategy" versus a "lead capacity strategy" for a service-oriented company in a rapidly growing market. (6marks)
b. Discuss the potential benefits and risks associated with lag capacity strategy and lead capacity strategy (10 marks)