



FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF QUALITY AND OPERATIONS MANAGEMENT

PROGRAMME	:	NATIONAL DIPLOMA LOGISTICS
SUBJECT	:	PRODUCTION PLANNING AND CONTROL
CODE	:	BPH11A1
DATE	:	WINTER EXAMINATION 2015 9 JUNE 2015
DURATION	:	(SESSION 2) 12:30 - 15:30
TIME	:	08:30 – 11:30
TOTAL MARKS	:	100
WEIGHTS	:	50%
ASSESSOR (Internal) MODERATOR	:	MS K. MUSHAVHANAMADI. MRS A. AMADI-ECHENDU
NUMBER OF PAGES	:	6 pages
REQUIREMENTS	:	SCANNER SHEETS

INSTRUCTIONS TO CANDIDATES:

- Answer ALL questions.
- This is a closed book EXAM.
- Leave margins and spaces between the questions.
- Show all your calculations.
- Unless otherwise indicated, express your answers correct to two (2) decimal places.
- Number your answers clearly.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this assessment.

SECTION A: SHORT ANSWER**17 MARKS**

1. The difference between job enrichment and job enlargement is that
 - A) enlarged jobs involve vertical expansion, while enriched jobs involve horizontal expansion
 - B) enriched jobs enable an employee to do a number of boring jobs instead of just one
 - C) job enlargement is more psychologically satisfying than job enrichment
 - D) job enrichment is suitable for all employees, whereas job enlargement is not
 - E) enriched jobs involve vertical expansion, while enlarged jobs involve horizontal expansion

2. Which of the following terms implies an increase in responsibility and control in the vertical direction?
 - A) job rotation
 - B) job enrichment
 - C) job re-design
 - D) job enlargement
 - E) job satisfaction

3. The behavioral approach to job design that involves giving the worker a larger portion of the total task is
 - A) job enlargement
 - B) job enrichment
 - C) job enhancement
 - D) job rotation
 - E) job involvement

4. A NASCAR pit crew consists of how many members?
 - A) 7
 - B) 5
 - C) 9
 - D) 10
 - E) 4

5. One of the six reasons domestic business operations enters decide the global market it is to
 - A) Competing on differentiation
 - B) Ethical issues
 - C) Attract and retain global talent
 - D) Low-cost leadership
 - E) Layout design

6. Competing on response means
- A) Competitive advantage
 - B) High product quality
 - C) High capacity utilization
 - D) Competing on cost
 - E) Reliable and quick response
7. A strategy is:
- A) a functional area of the firm.
 - B) the purpose for which an organization is established.
 - C) the goal that is to be achieved.
 - D) an action plan to achieve a mission.
 - E) a critical success factor.
8. The three major types of forecasts used by business organizations are
- A) strategic, tactical, and operational
 - B) economic, technological, and demand
 - C) exponential smoothing, Delphi, and regression
 - D) causal, time-series, and seasonal
 - E) departmental, organizational, and territorial
9. Which of the following is not a step in the forecasting process?
- A) Determine the use of the forecast.
 - B) Eliminate any assumptions.
 - C) Determine the time horizon.
 - D) Select forecasting model.
 - E) Validate and implement the results.
10. The two general approaches to forecasting are
- A) qualitative and quantitative
 - B) mathematical and statistical
 - C) judgmental and qualitative
 - D) historical and associative
 - E) judgmental and associative
11. Which of the following uses three types of participants: decision makers, staff personnel, and respondents?
- A) executive opinions
 - B) sales force composites
 - C) the Delphi method
 - D) consumer surveys
 - E) time series analysis

12. Forecasts

- A) become more accurate with longer time horizons
- B) are rarely perfect
- C) are more accurate for individual items than for groups of items
- D) all of the above
- E) none of the above

13. Reasons to study Operations Management include learning about

- A) how people organize themselves for productive enterprise
- B) how goods and services are produced
- C) what operations managers do
- D) a costly part of the enterprise
- E) all of the above

14. The five elements in the management process are

- A) plan, direct, update, lead, and supervise
- B) accounting, finance, marketing, operations, and management
- C) organize, plan, control, staff, and manage
- D) plan, organize, staff, lead, and control
- E) plan, lead, organize, manage, and control

15. An operations manager is **not** likely to be involved in

- A) the design of goods and services to satisfy customers' wants and needs
- B) the quality of goods and services to satisfy customers' wants and needs
- C) the identification of customers' wants and needs
- D) work scheduling to meet the due dates promised to customers
- E) maintenance schedules

16. All of the following decisions fall within the scope of operations management **except** for

- A) creating the company income statement
- B) design of goods and processes
- C) location of facilities
- D) managing quality
- E) All of the above fall within the scope of operations management.

17. Which of the following is not a step in the forecasting process?

- A) Determine the use of the forecast.
- B) Eliminate any assumptions.
- C) Determine the time horizon.
- D) Select forecasting model.
- E) Validate and implement the results.

SECTION B: SHORT QUESTIONS**10 MARKS**

1. List ten strategic decisions of OM that support missions and implement strategies (10)

SECTION C: CALCULATIONS**73 MARKS**

- 1) Weekly sales of copy paper at Cubicle Suppliers are in the table below. Compute a three-period moving average and a four-period moving average for weeks 5, 6, and 7. Compute MAD for each forecast. Which model is more accurate? Forecast week 8 with the more accurate method. [20]

<u>Week</u>	<u>Sales (cases)</u>
1	17
2	21
3	27
4	31
5	19
6	17
7	21

3. UJ is considering changes to its class structure in an effort to increase professor productivity. The old schedule had each professor teaching 5 classes per week, with each class meeting an hour per day on Monday, Wednesday, and Friday. Each class contained 20 students. The new schedule has each professor teaching only 3 classes, but each class meets daily for an hour. New classes contain 50 students. [19]

- 3.1 Calculate the labor productivity for the initial situation (students/hour). (4)
3.2 Calculate the labor productivity for the schedule change (students/hour). (4)
3.3 Are there any ethical considerations that should be accounted for? (3)
3.4 Suppose that each professor is required to have 2 hours of Office Hours each day he/she taught class. Is the schedule change a productivity increase? (8)

4. A firm cleans chemical tank cars in the Bay St. Louis area. With standard equipment, the firm typically cleaned 70 chemical tank cars per month. They utilized 10 liters of solvent, and two employees worked 20 days per month, 8 hours a day. The company decided to switch to a larger cleaning machine. Last April, they cleaned 60 tank cars in only 15 days. They utilized 12 liters of solvent, and the two employees worked 6 hours a day. [14]

4.1 What was their raw material and their labor productivity with the standard equipment? (4)

4.2 What is their raw material and their labor productivity with the larger machine? (4)

4.3 What is the change (in percentage) in each productivity measure? (6)

5. Columbus Stainless (Pty) Limited, is South African's steel manufacturing company. The company is considering expanding its business to the following three locations, namely; Singapore, Australia and Germany. Therefore, the company needs your assistance to determine the most economical location for an expected volume of 2, 200 unit per year. The fixed costs per year at the sites are R40, 000, R70, 000 and R 90.000, respectively; and the variable costs are R70 per unit, R50 per unit and R40 per unit, respectively. The expected selling price for each stainless steel flat is R 130. Calculate the total cost involved for each country and advise Columbus Stainless (Pty) limited which country is the most economical location to consider for their expansions. [20]