FACULTY OF ENGINEERING AND BUILT ENVIRONMENT

NOVEMBER 2015 EXAMINATION

UNIVERSITY
OF
JOHANNESBURG

DEPARTMENT	QUALITY AND OPERATIONS MANAGEMENT
MODULE	OPERATIONS MANAGEMENT 1A
CODE	BPJ1A00
DATE	12 NOVEMBER 2015
DURATION	(SESSION 1) 08:30 - 10:30
TIME	
TOTAL MARKS	100

EXAMINER	MS E NWOBODO-ANYADIEGWU
EXTERNAL MODERATOR	MR S MUKWAKUNGU
NUMBER OF PAGES	8 PAGES

INSTRUCTIONS TO CANDIDATES:

- Answer ALL questions.
- Question paper must be handed in.
- This is a closed book assessment.
- Leave margins and spaces between the questions.
- Show all your calculations.
- Unless otherwise indicated, express your answers correct to two (2) decimal place.
- Where appropriate, indicate the units of your answer. (e.g. Hour, R)
- Write neatly and legibly
- NOTE: Marks will be awarded for theoretical knowledge, application of the theory and use of relevant examples.
- The general University of Johannesburg policies, procedures and rules pertaining to written assessments apply to this examination.

SECTION A [77]

QUESTION 1 [BUSINESS FUNTION] [16]

1.1   In a typical business organisation there are three basic functions; for a named business of your choice identify these three functions and provide three main responsibility of each. (12)

1.2.   Discus the relationship between each of the business functions and operations management in terms of information flow. (4)

QUESTION 2 [PRODUCT DESIGN] [16]

2.1   What is product design? (4)

2.2   What are the common steps involve in the development of a product design (8)

2.3   With the aid of a diagram discuss the major differences between sequential design and concurrent design. (4)

QUESTION 3 [LOCATION STRATEGY] [27]

3.1   What is the objective of location decision? (2)

3.2   Ms. Dineo Mpati owns two exclusive women's clothing stores in Southdale. In her plan to expand to a third location , she narrowed her decision to three sites – one in a Calton Center office building , one in a Mapoya shopping mall, and one in an old Victorian house in the suburban area of Sandton. She feels that security is absolutely the most important factor to be considered, although customer traffic is 90% as important as security. Further, the more distant the new store is from her two existing stores, the better. She weights this factor to be 60% as important as customer traffic. Dineo developed the table below, in which she graded each site from A to D, with A being best. Which site is preferable?

Potential Locations			Factors
Calton Center	Mapoya Shopping Mall	Sandton	
D	C	A	Security
B	A	D	Customer traffic
B	A	C	Distance from existing store

To aid in this analysis, we assign a rating

Grade	Rating
A	4
B	3
C	2
D	1

(13)

3.3 Discuss six major factors that can affect this kind of region/community location decisions especially if Dineo is to build a clothing factory ? (12)

QUESTION 4 [CAPACITY PLANNING] [18]

4.1 Why is capacity decision important? (4)

4.2 Identify and discuss **five** major factors that will determine effective capacity at the University of Johannesburg. (10)

4.3 What is the expected output for a plant with a design capacity of 108 tires per day, if its effective capacity is 90 tires and its efficiency is 90%? (2)

4.4 A work center operates 2 shifts per day 5 days per week (8 hours per shift) and has 4 machines of equal capability. This is effective capacity. If the work center has a system efficiency of 95%, what is the expected output in hours per week? (2)

SECTION B: MULTIPLE CHOICE (1 Mark each) [23]

Read the Questions below and choose the correct answer by shading the correct option in scanner sheet provided.

1) Which of the following statements is **true**?
A) The person most responsible for initiating the use of interchangeable parts in manufacturing was Eli Whitney.
B) The origins of management by exception are generally credited to Frederick W. Taylor.
C) The person most responsible for initiating the use of interchangeable parts in manufacturing was Walter Shewhart.
D) The origins of the scientific management movement are generally credited to Henry Ford.
E) The person most responsible for initiating the use of interchangeable parts in manufacturing was Henry Ford.

2) Which of the following is **not** a current trend in operations management?
A) just-in-time performance
B) global focus
C) supply-chain partnering
D) mass customization
E) All of the above are current trends.

3) Which of the following statements about trends in operations management is false?
A) Job specialization is giving way to empowered employees.
B) Local or national focus is giving way to global focus.
C) Environmentally-sensitive production is giving way to low-cost focus.
D) Rapid product development is partly the result of shorter product cycles.
E) All of the above statements are false.

4) Productivity measurement is complicated by
A) the competition's output
B) the fact that precise units of measure are often unavailable
C) stable quality
D) the workforce size
E) the type of equipment used

5) Which productivity variable has the greatest potential to increase productivity?
A) labor
B) globalization
C) management
D) capital
E) none of the above

6) Productivity can be improved by
A) increasing inputs while holding outputs steady

B) decreasing outputs while holding inputs steady
C) increasing inputs and outputs in the same proportion
D) decreasing inputs while holding outputs steady
E) none of the above

7) Three commonly used productivity variables are
A) quality, external elements, and precise units of measure
B) labor, capital, and management
C) technology, raw materials, and labor
D) education, diet, and social overhead
E) quality, efficiency, and low cost

8) The service sector has lower productivity improvements than the manufacturing sector because
A) the service sector uses less skilled labor than manufacturing
B) the quality of output is lower in services than manufacturing
C) services usually are labor-intensive
D) service sector productivity is hard to measure
E) none of the above

9) Productivity tends to be more difficult to improve in the service sector because the work is
A) often difficult to automate
B) typically labor-intensive
C) frequently processed individually
D) often an intellectual task performed by professionals
E) All of the above make service productivity more difficult.

10) Buying a competitor's new product and studying its design features by disassembling it and analyzing its parts and features is
    A) reengineering
    B) disaggregating
    C) redesign
    D) bench marking
    E) reverse engineering

11) What technique is based on computing the quantity of goods a company needs to sell to just cover its costs?
    A) net present value
    B) break-even analysis
    C) internal rate of return
    D) activity based costing
    E) variable costing

12) Costs that are proportional to the amount of units produced, such as materials and labour, are
    A) fixed costs
    B) marginal revenue

C) sunk costs
D) cost drivers
E) variable costs

13) Which of the following is a factor that influences the market
Opportunity?
A) economic change
B) political and or legal change
C) sociological change
D) technological change
E) all of the above

14) Pareto analysis which is a technique of problem analysis involves
A) Reengineering
B) disaggregating
C) The 80 – 20 rule.
D) Bench Marking
E) Reverse engineering

15) Which of the following pioneers made professional impact during the quality evolution era?
A) Frank Gilbreth

B) Edwards Deming

C) Henry L. Gantt

D) Lillian Gilbreth

E) Frederick W. Taylor

16) 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

17) Who among the following is not one of the quality gurus who contributed to the evolution of Total Quality Management?

A) Walter Shewhart

B) Philip Crosby

C) Joseph Juran

D) Henri Fayol

E) Armand Feigenbaun

18) Which is **not** true regarding differences between goods and services?

A) Tangible goods are generally produced and consumed simultaneously; services are not.

B) Most goods are common to many customers; services are often unique to the final customer.

C) Services tend to have a more inconsistent product definition than goods.

D) Services tend to have higher customer interaction than goods.

E) All of the above are true.

19) Which of the following is **not** a typical service attribute?

A) intangible product

B) easy to store

C) customer interaction is high

D) simultaneous production and consumption

E) difficult to resell

20) Which of the following statements about trends in operations management is false?

A) Job specialization is giving way to empowered employees.

B) Local or national focus is giving way to global focus.

C) Environmentally-sensitive production is giving way to low-cost focus.

D) Rapid product development is partly the result of shorter product cycles.

E) All of the above statements are false.

21) Miss Palesa Kekana sells flower pots at county fairs. The variable cost to make each pot is R20 each, and she sells them for R50. The cost to rent a booth at the fair is R150. How many of these must Miss Kekana sell to break-even?

A) 1

B) 2

C) 4

D) 5

E) 6

22. Miss Palesa Kekana sells flower pots at county fairs. The variable cost to make each pot is R20 each, and she sells them for R50. The cost to rent a booth at the fair is R150. What is the break-even point in Rand?

A) 200
B) 250
C) 300
D) 350
E) 400

23. Which of the following worker characteristics would likely be least important for S.A. firms looking to open up call centers in different countries?

A.   willing to accept low wages

B.   have a high level of education

C.   speak English

D.   possess an in-depth knowledge of American popular culture

E.   are young

TOTAL MARKS   **[100]**

END OF ASSESSMENT