



UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2018/2019**

COURSE NAME : ENGINEERING MANAGEMENT
COURSE CODE : BEE 30103
PROGRAMME : BEV / BEJ
EXAMINATION DATE : DECEMBER 2018 / JANUARY 2019
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : 1) ANSWER ALL QUESTIONS
2) ANSWER PART A IN THE OMR PAPER
3) ANSWER PART B IN THIS QUESTION PAPER
4) STUDENT ARE NOT ALLOWED TO BRING OUT THE QUESTION PAPER

THIS QUESTION PAPER CONSISTS OF FIFTH (15) PAGES

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PART A

There are a total of FIFTY (50) multiple choice questions. Each question is given one mark.

- Q1** The most effective way to plan for the future is:
- a. appoint a long-range planning committee
 - b. develop solid relationships throughout the organization
 - c. hold a retreat
 - d. engage in strategic planning
- Q2** Why do most service organizations lack a viable strategic plan?
- a. they are unsure of their mission
 - b. they have no experience
 - c. they are too busy putting out “brush fires”
 - d. they are lacked of leadership skills
- Q3** The following are among the middle management job scopes **EXCEPT**:
- a. manage through other managers
 - b. make plan of intermediate range
 - c. establish departmental policies
 - d. carry out plans and objectives
- Q4** The fundamental purpose for the existence of any organization is described by its:
- a. policies
 - b. mission
 - c. procedures
 - d. strategy
- Q5** A strategy is
- a. a set of opportunities in the marketplace
 - b. a simulation used to test various product line options
 - c. a plan for cost reduction
 - d. an action plan to achieve the mission
- Q6** The following are not the **THREE (3)** major types of financial statements except:
- a. income statement, debt account, and asset account
 - b. income statement, debt account, and cash flow statement
 - c. income statement, balance sheet, and cash flow statement
 - d. balance sheet, debt account, and cash flow statement

Q7 Profit margin is the

- percentage of net profit with respect to net sales
- percentage of gross profit with respect to net sales
- percentage of gross profit with respect to gross sales
- percentage of direct cost with respect to net sales

Q8 The formula use to calculate current ratio is

- | | |
|--|---|
| (a) $\frac{\text{Current Assets}}{\text{Current liabilities}}$ | (b) $\frac{\text{Inventory}}{\text{Current liabilities}}$ |
| (c) $\frac{\text{Current liabilities}}{\text{Current assets}}$ | (d) $\frac{\text{Current liabilities}}{\text{Inventory}}$ |

Q9 The following are common leadership styles, **EXCEPT**:

- transformational leadership
- transactional leadership
- transnational leadership
- autocratic leadership

Q10 An effective leader is a person who does the following;

- creates an inspiring vision of the future
- motivates and inspires people to engage with that vision.
- coach and builds a team, so that it is more effective at achieving the vision
- all of the above.

Q11 Which of the following is **NOT** the disadvantage of moving average method?

- a trend for the period for the whole series can not be found.
- a large of amount of data is required in the calculation for more accurate prediction.
- the calculation is by simple arithmetic that the extreme value could exist.
- old data has higher weight and therefore prediction is not up to date.

Q12 In this formula, $F_{n+1} = F_n + \alpha(A_n - F_n)$ What is α ?

- the weight
- the factor to estimate the error
- the multiplier
- extreme value

Q13 Which of the following need **NOT** to be retained for linear regression line forecasting?

- a. past forecast for current period
- b. intercept value
- c. current actual
- d. smoothing constant

Q14 Which of the following is **NOT** a routine decision?

- a. the rate for bonus
- b. voluntary separation scheme
- c. termination of appointment
- d. overtime for operators

Q15 Bounded rationality is made because

- a. making the best solution
- b. gather enough information and data for decision making
- c. managers have no time /resources to consider all alternatives
- d. making market surveys and thorough labour market analysis

Q16 Which of the following is **NOT** the contents of a decision tree?

- a. chance
- b. outcome
- c. probability
- d. uncertainty

Q17 A factory is producing two products (A and B). \$20 profit per unit of product A and \$15 per unit of product B. What of the following equation describe the production level of a units of product A and b units of product B that maximizes the profit P?

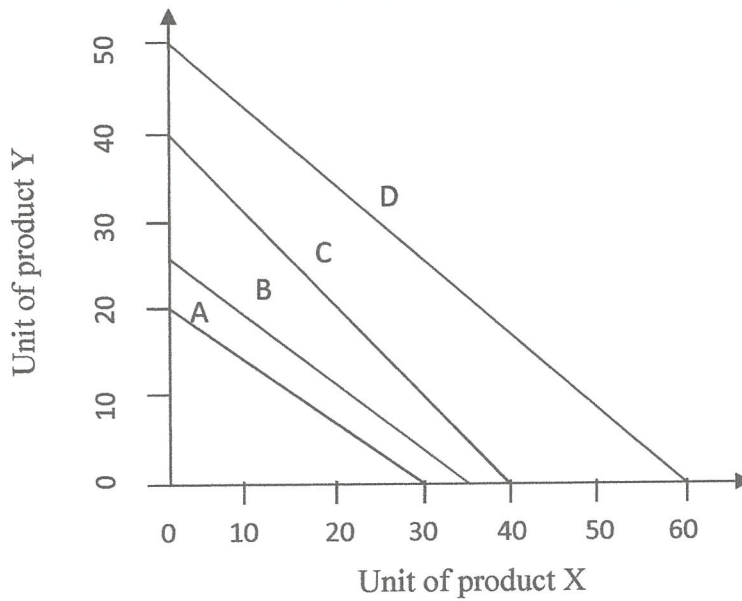
- a. $P = 20a + 15b$
- b. $P = 35b + 25a$
- c. $P = 20a + 15b$
- d. $P = 30b + 10a$

Q18 The profit of a company is bound by the following factors **EXCEPT**:

- a. the working hour of the workers
- b. the intelligence of the worker
- c. the speed of a machine
- d. the production speed



Q19 Choose the correct isoprofit line if the profit is \$350 by selling 35 units of X or 25 units of Y.



- a. A
- b. B
- c. C
- d. D

Q20 Table Q20 shows the actual and future values for forecasting. Calculate b value for the linear fitting line of $y=a+bx$.

Table Q20

	x	y	xy	x^2
2015	0	1100	0	0
2016	1	1300	1300	1
2017	2	1200	2400	4
2018	3	1600	4800	9
2019	4	2000	8000	16

The value of b is:

- a. 100
- b. 210
- c. 205
- d. 200



Q21 Total Quality Management and International Standard Organization both focus on

- a. customer
- b. employee
- c. supplier
- d. all of the above

Q22 According to Demming, quality problems are

- a. due to management
- b. due to method
- c. due to machine
- d. due to material

Q23 While setting quality objectives, _____ to be considered

- a. material quality
- b. customer need
- c. market demand
- d. all of the above

Q24 Match the information in column 2 to column 1 of **Table Q24**

Table Q24

A. TQM	1. Small change
B. Kaizen is	2. Continuous improvement
C. Quality circle can solve problem related to	3. Employee participation
D. Quality circle benefit to	4. Employee

The correct order is:

- a. A-3, B-1, C-2, D-4
- b. A-1, B-3, C-2, D-4
- c. A-3, B-1, C-4, D-2
- d. A-3, B-2, C-1, D-4

Q25 _____ helps organization reduce employee turnover and absenteeism

- a. Job design
- b. Training and development
- c. Wage revision
- d. All of the above



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- Q26** The objective of ISO-9000 family of Quality management is
- customer satisfaction
 - employee satisfaction
 - skill enhancement
 - environmental issues
- Q27** Which of the following is (are) the machine down time?
- waste
 - no material
 - breakdown
 - all of the above
- Q28** Which of the following is responsible for quality objective?
- top level management
 - middle level management
 - frontline management
 - all of the above
- Q29** CMM stands for
- capability matching model
 - capability monitoring model
 - capability measuring model
 - capability maturity model
- Q30** Which of the following is for Environmental Management?
- ISO-9000
 - ISO-14000
 - ISO-26000
 - ISO-31000
- Q31** Which of the following is most likely to affect the location decision of a service firm rather than a manufacturing firm?
- energy and utility costs
 - attitude toward unions
 - parking and access
 - cost of shipping finished goods

- Q32** Which of the following is **NOT** an operations strategic decision?
- a. price
 - b. layout design
 - c. quality
 - d. inventory
- Q33** A Project Manager should have the following skills **EXCEPT**:
- a. effective leadership
 - b. competent and motivated at work
 - c. lack of effective engagement with stakeholders
 - d. conflict management
- Q34** Project success or failure is determined by the outcome of the project variables, including:
- a. resource
 - b. time
 - c. quality
 - d. all of the above
- Q35** A forecast with a time horizon of about 5 to 7 years is typically called a:
- a. long-range forecast
 - b. medium-range forecast
 - c. short-range forecast
 - d. strategic forecast
- Q36** If sales for years 2017, 2016, 2015 and 2014 were 1600, 1200, 1300 and 1100 respectively. Forecast the sales in the year 2018 (F2018) using simple moving average method.
- a. 1500
 - b. 1400
 - c. 1300
 - d. 1200
- Q37** An operations manager is not likely to be involved in:
- a. the quality of products and services to satisfy customers' wants and needs
 - b. the identification of customers' wants and needs
 - c. work scheduling to meet the due dates promised to customers
 - d. forecasting sales

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- Q38** Which of these is **NOT** one of the constraints of a project?
- a. scope
 - b. resources
 - c. team
 - d. budget
- Q39** Which of the following is **NOT** correct about initial phase of a project?
- a. the cost associated at the beginning of the project is highest
 - b. stakeholders have maximum influence during this phase
 - c. the highest uncertainty is at this stage of the project
 - d. all the above statements are correct
- Q40** Which of the following is the most important element of Project Management Plan that is useful in HR Planning process?
- a. risk management activities
 - b. quality assurance activities
 - c. activity resource requirements
 - d. budget control activities
- Q41** Maintenance is to keep system's equipment in _____.
- a. working order
 - b. running condition
 - c. both of the above
 - d. zero defect condition
- Q42** One of the purposes of maintenance is to maximize the performance of the production equipment. Others are _____.
- a. prevent breakdown or failures
 - b. minimize production loss from failures
 - c. increase reliability of the operation system
 - d. all of the above
- Q43** Principle objectives in maintenance include _____.
- a. to achieve product quality and customer satisfaction
 - b. to maximize useful life of the equipment
 - c. to keep equipment safe
 - d. all of the above

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- Q44** The three types of maintenance are _____.
- a. corrective
 - b. scheduling
 - c. preventive
 - d. all of the above
- Q45** Corrective or Breakdown maintenance is the _____ maintenance.
- a. post-action
 - b. post-reaction
 - c. pre-action
 - d. pre-reaction
- Q46** If scheduling maintenance is not made, it will account for _____.
- a. overhauling of machines
 - b. changing of heavy equipment oils
 - c. cleaning of water and other tanks
 - d. all of the above
- Q47** Prevention is better than _____.
- a. cure
 - b. post treatment
 - c. repair
 - d. either (a) or (b)
- Q48** In predictive maintenance human _____ and sensitive _____ are used.
- a. knowledge, devices
 - b. action, machines
 - c. sense, instruments
 - d. instinct, instruments
- Q49** In predictive maintenance, sensitive instruments include _____.
- a. audio gauge
 - b. vibration analyzers
 - c. amplitude meters
 - d. all of the above

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Q50 Reliability is the performance of the system or an equipment is to work _____ for a given _____ when used under _____ conditions.

- a. satisfactorily, period of time, specified operating
- b. continuously, break of time, stress
- c. intermittently, time, faulty
- d. continuously, chance, pressurised

PART B

There are a total of FIVE (5) subjective questions.

Q51 *“Leadership and teamwork are the two most important keywords for the success of any organization. Poor leadership cannot lead a team to success and a group of unmotivated and incompetent team cannot help a leader to achieve great success.”* Kouzes and Posner (2007).

From your understanding, summarise at least **FIVE (5)** importance of leadership skills that can bring the team or organization to achieve their goal.

(10 marks)



Q52 You are a technical manager of a company which manufacture locks and keys. If a stamping machine is showing sign of breaking down, then a new machine is required which is associated with a cost of \$10 mil for next couple of months. If the machine is safe to be used then the cost is \$0. It is estimated that there is a 10% probability that the machine is safe. If the machine is repaired immediately, then the probability of the machine having major damaged is 20%. Repairing the machine costs \$1 mil.

(a) Construct a table to show the probability in reviving the machine. (2 marks)

(b) Build a decision tree to show the decision. (2 marks)

(c) Draw a table to show the Net Path Value (NPV). (2 marks)

(d) Calculate the expected monetary value (EMV). (2 marks)

(e) Identify which node is the best decision to lower the cost of operation? (2 marks)

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Q53 (a) What is strategic Planning?

(4 marks)

(b) Explain the Deming Cycle.

(6 marks)

Q54 RISDA is an agency that operates in the rubber industry Malaysia. As the nation's largest producer of rubber in the world, RISDA required to maintain production volume each year. To meet customer demand, RISDA has identified several areas around Malacca to carry out Rubber Replanting Project (RRP). The planning of this project is shown in **Table Q54**.

Table Q54

Activity	Actions	Predecessors	Time (months)
A	Identify	Start	0
B	Deforestation	A	8
C	Clearance	A	4
D	Cultivation	A	6
E	Tempering/Watering	B,C	10,6
F	Care/Preservation	D,E	8,4

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(a) Construct an activity network diagram for RRP project. (3 marks)

(b) Calculate the early start (ES), early finish (EF), late start (LS) and late finish (LF) for each activity. (4 marks)

(c) Determine the critical path for RRP project. (2 marks)

(d) How long did it take to complete the RRP project if all goes well? (1 marks)

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Q55 In the production of the semiconductor industry, the bathtub curve is a popular concept in engineering management.

(a) Draw a Bathtub curve.

(4 marks)

(b) Discuss **THREE (3)** distinctive phases of Bathtub curve.

(6 marks)

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- END OF QUESTIONS -

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