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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2022/2023**

COURSE NAME : ENGINEERING MANAGEMENT

COURSE CODE : BEE 30103

PROGRAMME CODE : BEJ / BEV

EXAMINATION DATE : FEBRUARY 2023

DURATION : 3 HOURS

INSTRUCTION : 1. ANSWER ALL QUESTIONS.
2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**.
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK.
4. STUDENT ARE **NOT ALLOWED** TO BRING OUT THE QUESTION PAPER.

THIS QUESTION PAPER CONSISTS OF **ELEVEN (11)** PAGES

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PART A:

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

- Q1** In what order do managers typically perform management functions?
- A Organizing, planning, controlling, leading
 - B Leading, planning, controlling, organizing
 - C Planning, organizing, leading, controlling
 - D Controlling, planning, organizing, leading
- Q2** _____ is the process of establishing objectives and suitable courses of action before taking an action.
- A Planning
 - B Organizing
 - C Management
 - D Coordinating
- Q3** At what level of an organization does a corporate manager operate?
- A Functional
 - B Top level
 - C Middle Level
 - D First line level
- Q4** Which of the following is **NOT** recognized as a key skill of managers?
- A Human skills
 - B Technical skills
 - C Conceptual skills
 - D Predictive skills
- Q5** The Proton corporation opens an opportunity to become a car industry leader in the region within five years. This is considered:
- A Tactical planning
 - B Strategic planning
 - C Long-term planning
 - D Short-term planning
- Q6** The forms of control commonly used by managers in an organization include work assignment, inspection and giving instructions. A manager who has power to influence on his subordinates is said to have:
- A Expert power
 - B Reward power
 - C Coercive power
 - D Legitimate power

- Q7** Which of the following statements refer to the importance of an organization chart?
- I it shows the types of jobs performs
 - II it shows the duties and responsibilities
 - III It shows the works segments of employee groups
 - IV it shows the relationship between managers and subordinates
- A I, II and III
 - B I, II and IV
 - C II, III and IV
 - D I, II, III and IV
- Q8** The following individuals are famous pioneers in the motivational content theories **EXCEPT**:
- A Fayol
 - B Maslow
 - C Herzberg
 - D McGragor
- Q9** Managers set up control systems to establish standard and compare performance. The step in the control process that an organization must follow to achieve organization effectiveness are:
- I Set the standards
 - II Not taking any corrective action
 - III Compare the actual performance with the standards
 - IV Measure the actual performance against the benchmark
- A I, II and III
 - B I, III and IV
 - C II, III and IV
 - D I, II, III and IV
- Q10** Which of the following is **NOT** true regarding control?
- A Control is forward looking
 - B Control is a continuous process
 - C Control is closely related to organizing
 - D Control embedded in every level of the organizational hierarchy
- Q11** What organizations might be facing if they do not have a proper documentation?
- A Transparency
 - B Predictable result
 - C Product quality varies
 - D Streamline implementation
- Q12** The followings are types of collaboration tools **EXCEPT**:
- A Communication technology
 - B Conferencing technology
 - C Coordination technology
 - D Consumer technology

- Q13** Pareto charts are used to _____.
- A identify inspection points in a process
 - B organize errors, problems or defects
 - C outline production schedules
 - D show an assembly sequence
- Q14** The acronym SWOT stands for _____.
- A Services, Worldwide, Overcome, Threats
 - B Strengths, Worldwide, Overcome, Threats
 - C Special, Weaknesses, Opportunities, Threats
 - D Strengths, Weaknesses, Opportunities, Threats
- Q15** Which of the following statements is **TRUE** regarding control charts?
- A Values above the upper and lower control limits indicate points out of adjustment
 - B Control charts graphically present data
 - C Control charts plot data over time
 - D All of the above
- Q16** Two variables, x and y, are related. Variable x increases or decreases with y. Which of the following tools could best be used to graphically show this relationship?
- A Scatter Plot
 - B Histogram
 - C Control Charts
 - D Ishikawa diagram
- Q17** The purpose of strategic planning is to find ways in which the company can best:
- A overcome losses
 - B avoid paying taxes
 - C use its strengths to take advantage of attractive opportunities in the environment
 - D avoid the expense of costly research and development while still getting the benefits
- Q18** Which of the following describes the importance of collaboration in the workplace?
- A Find out what others are doing
 - B Submit a proposal
 - C Answer questions
 - D All of the above
- Q19** In an industry, Cause-and-effect diagram identifies source of variations that grouped into few categories **EXCEPT**;
- A Model
 - B Human
 - C Material
 - D Methods

- Q20** Enterprise Resource Planning (ERP) system is for _____.
- A entire organization
 - B marketing and sales
 - C production department
 - D major departments only
- Q21** Total Quality Management emphasizes;
- A the responsibility of the Quality Control staffs to identify and solve all quality-related problems
 - B a commitment to quality that goes beyond internal company issues to suppliers and customers
 - C how resources are transformed into quality goods and services
 - D a process where mostly statisticians get involved
- Q22** Standardization is an appropriate strategy in which stage of the product life cycle?
- A growth
 - B decline
 - C maturity
 - D retirement
- Q23** "Kaizen" is a Japanese term which mean _____.
- A setting standards
 - B Just-in-time (JIT)
 - C foolproof mechanism
 - D continuous improvement
- Q24** ISO 9000 seeks standardization in terms of _____.
- A procedures to manage quality
 - B suppliers' specifications
 - C production procedures
 - D products
- Q25** TQM & ISO both focusses on
- A Supplier
 - B Customer
 - C Material
 - D Employee
- Q26** DMAIC improves a system through the following management **EXCEPT**;
- A The shortest path for delivery of goods
 - B Shortened the processing time
 - C Increase the value of goods
 - D Improve the process

- Q27** There are **FIVE (5)** processes in the Lean concept. Which of the following is in the right sequence?
- A Seek continuous improvement → Establish pull based on customer demand → Create flow to the customer → Map the value stream → Identify you customer and their value
 - B Identify you customer and their value → Seek continuous improvement → Map the value stream → Create flow to the customer → Establish pull based on customer demand
 - C Identify you customer and their value → Map the value stream → Create flow to the Customer → Establish pull based on customer demand → Seek continuous improvement
 - D None of the above
- Q28** A factory was found with over processing and defects in the production. Which concept of management is suitable to be applied to address this issue?
- A Lean Six Sigma
 - B Control Quality
 - C Plan Quality Management
 - D Total Quality Management
- Q29** Which company first created Six Sigma?
- A Honda
 - B Iceland
 - C Samsung
 - D Motorola
- Q30** The ISO 27001 is for _____.
- A The field of quality management
 - B The management system for information security (ISMS)
 - C The social theme of environmental legislation/ management
 - D Energy management and offers insights into the energy consumption of companies
- Q31** Which of these is **NOT** one of the constraints in project management?
- A Cost
 - B Team
 - C Quality
 - D Schedule
- Q32** What are the elements of project management process?
- A Initiation, Planning, Execution, Controls, Closeout
 - B Planning, Resourcing, Execution, Monitoring, Delivering
 - C Managing, Time, Processing, Cost, Human Power
 - D High-Tier Management, Medium-Tier Management, Lower-Tier Management

- Q33** A project is a one-time job that has definite starting and ending points with clear objectives. Which of the following is **NOT** considered in defining the objectives?
- A Scope
 - B Cost
 - C Human resources
 - D Schedule
- Q34** The phases of a project life cycle are _____
- A starting, planning, organizing, controlling, leading and closing
 - B concept, definition, development, hand-over and closure
 - C initiation, definition, planning, monitoring and operations
 - D concept, definition, initiation, implementation and evaluation
- Q35** Which of the following is **NOT** the skill set for a good project manager?
- A Supporting
 - B Delegating
 - C Negotiating
 - D Micromanaging
- Q36** _____ is the process of formally recognizing that a new project exists or that an existing project should continue into its next phase.
- A Initiation
 - B Planning
 - C Recognition
 - D Determining
- Q37** A goal of project management is to _____.
- A work without any organizational constraints
 - B control the financial aspect of project
 - C maintaining status quo of process
 - D meet manager's expectations
- Q38** A project planning tool that subdivided complicated tasks into smaller tasks is called _____.
- A Gantt Chart
 - B Milestone Schedule
 - C Responsibility Matrix
 - D Work Breakdown Structure
- Q39** Maintainability is _____
- A the result of design
 - B unnecessary for unreliable system
 - C the ability of an item to be maintained
 - D the product or system in good condition

- Q40** Critical Path (CP) in Project Management is a method for modelling projects where all the necessary input factors are considered within the optimal timeline for completing it (to get an output). Which of the following is **NOT** the input factors for (CP)?
- A Customer
 - B Milestone
 - C Time estimates
 - D Task dependencies
- Q41** The following activities are required in executing a project's plan **EXCEPT**:
- I Reporting to customer
 - II Level project resources
 - III Schedule work packages
 - IV Establish team operating rules
- A I, II and IV
 - B II, III and IV
 - C I, III, and IV
 - D I, II, III and IV
- Q42** Reliability is the performance of the system, or an equipment is to work _____ for a given _____ when used under _____ conditions.
- A complete, task, demand
 - B intermittently, time, faulty
 - C continuously, break of time, stress
 - D satisfactorily, period of time, specified operating
- Q43** The purposes of maintenance are:
- I Prevent breakdown or failures
 - II Minimize production loss from failures
 - III Increase reliability of the operating systems
 - IV Maximize performance of production equipment efficiently
- A I, II and III
 - B II, III and IV
 - C I, II, and IV
 - D I, II, III and IV
- Q44** _____ implies that repairs are made after the equipment is failed and cannot perform its normal function anymore.
- A Periodic maintenance
 - B Corrective maintenance
 - C Functional maintenance
 - D Preventive maintenance

- Q45** When the reliability of a product is _____, the frequency of maintenance will _____.
- A high, low
 - B low, high
 - C small, big
 - D big, small
- Q46** _____ is important because if neglected can result in breakdown of machines.
- A Facility maintenance
 - B Periodic maintenance
 - C Scheduled maintenance
 - D Condition-based maintenance
- Q47** What are the costs of not doing maintenance?
- I The cost will be reduced
 - II Loss income due to failures
 - III Reduce reliability of a system
 - IV Equipment may damage in the long run
- A I, II and IV
 - B II, III and IV
 - C I, III, and IV
 - D I, II, III, and IV
- Q48** _____ maintenance make use of human sense and other sensitive instruments such as audio gauge and vibration analyzer.
- A Periodic
 - B Machine
 - C Predictive
 - D Instrument
- Q49** What are the categories of maintenance?
- A Break-down, Scheduled, Preventive, Condition-based
 - B Break-down, Corrective, Reliable, Predictive
 - C Corrective, Periodic, Reliable, Prevention
 - D Corrective, Facility, Machine, Software
- Q50** The principal objectives in maintenance are:
- I Maximize useful life of equipment
 - II Maximize severity of interruption.
 - III To achieve customer satisfaction
 - IV Prevent safety hazards
- A I, II and IV
 - B II, III and IV
 - C I, III, and IV
 - D I, II, III and IV

PART B:*Answer all the questions*

- Q1** (a) Management is the process of getting things done, effectively and efficiently, with and through other people. The management hierarchy is important for this. Describe the three management levels and the roles required for each level. (6 marks)
- (b) Planning is the process of establishing goals, setting out objectives and defining the methods by which these goals and objectives are to be attained. List **FOUR (4)** purpose of planning. (4 marks)
- Q2** (a) Briefly outline the concept of strategic planning, and the steps involved in implementing this technique in organizations. (4 marks)
- (b) There are seven quality management tools and techniques that can help organization to identify, analyze and assess data that are relevant to their business.
- Provide **ONE (1)** quality management tool that is suitable to define the correlation between two variables. Then, explain in detail the characteristics of the chosen tool. (6 marks)
- Q3** (a) 'Kaizen' also known as continuous improvement, is an important principle of Total Quality Management (TQM). It is a philosophy that seeks to make never-ending improvements to the process of converting inputs into outputs.
- Describe in detail about the process for continuous quality improvement that can identify the most effective solution before implementation. (6 marks)
- (b) Differentiate between continuous improvement and traditional approach. (4 marks)

Q4 A project consists of eleven activities, A to K. The duration (in days), and the activities preceding each of them shown in **Table Q4**.

Table Q4

Activities	Preceding activities	Duration (weeks)
A	-	11
B	-	10
C	A	12
D	B	12
E	B	28
F	A	15
G	C	33
H	D	42
I	A	18
J	E, H, G	5
K	F, I, J	8

(a) Construct a PERT network diagram for the project. State the early start, late start, early finish and late finish in the diagram. (9 marks)

(b) Find the critical path in the network diagram. (1 mark)

Q5 (a) Reliability of a system or product can be based on **FOUR (4)** main elements. Describe each element of reliability in detail. (6 marks)

(b) List **TWO (2)** advantages and disadvantages of preventive maintenance. (4 marks)

-END OF QUESTIONS -