



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2023/2024**

COURSE NAME : ENGINEERING MANAGEMENT

COURSE CODE : BEE 30103

PROGRAMME CODE : BEJ / BEV

EXAMINATION DATE : JULY 2024

DURATION : 3 HOURS

INSTRUCTION

1. ANSWER ALL QUESTIONS.

2. THIS FINAL EXAMINATION IS CONDUCTED VIA.

Open book

Closed book

3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK.

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THIS QUESTION PAPER CONSISTS OF **TWELVE (12)** PAGES

**PART A: ANSWER ALL QUESTIONS**

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

- Q1** \_\_\_\_\_ are plans that apply to the entire organization and establish the organization's overall goals (usually 3 years to 10 years).
- A. Tactical planning
  - B. Strategic planning
  - C. Contingency planning
  - D. Operational planning
- Q2** Actual performance normally is the same as the original plan and therefore it is necessary to check for deviation and to take corrective action. This action refers to what management function?
- A. Planning
  - B. Controlling
  - C. Leading
  - D. Organizing
- Q3** What is the most essential attribute of a project manager?
- A. Leadership
  - B. Charisma
  - C. Knowledge
  - D. Communication skill
- Q4** Power is the ability to cause action, politics is the art of obtaining power. Which of the following powers refers to the CEO of the company.
- A. Expert power
  - B. Reward power
  - C. Coercive power
  - D. Legitimate power
- Q5** Which of the following statements refer to the importance of task delegation in the organization?
- I delegations relieves the managers.
  - II the subordinates given a chance to develop their skills.
  - III delay in solving problems.
  - IV it shows the relationship between managers and subordinates.
- A. I and II
  - B. II and III
  - C. III and IV
  - D. I, II, III and IV

**Q6** Who are the following individuals are famous pioneers in the motivational content theories?

- I Fayol
- II Maslow
- III McGragor
- IV McFord

- A. I and II
- B. II and III
- C. III and IV
- D. II and IV

**Q7** Controlling is one of the important elements in management function. The step in the control process that an organization must follow to achieve organization effectiveness are:

- I Use the normal 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 and II
- B. II and III
- C. III and IV
- D. II and IV

**Q8** Which of the following is NOT the perspective on the timing of control?

- A. Screening control
- B. Corrective action control
- C. Feedback control
- D. Feedforward control

**Q9** Planning tools are likely to be initiative-specific and include below, **EXCEPT**:

- A. Budget estimation
- B. Things-to-do checklist
- C. Sample meeting agenda
- D. Action item checklist

**Q10** In order to help an organization develop awareness for all important factors in making decisions, the following tools can be used, **EXCEPT**:

- A. PESTLE Analysis
- B. SWOT analysis
- C. TRISZ analysis
- D. VRIO framework

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**Q11** Which of the element below is part of PESTLE analysis?

- A. Social
- B. System
- C. Strategy
- D. Sectoring

**Q12** To identify competitiveness of your product, factors below play important role, except:

- A. Supply chain and ecosystem.
- B. Value to the customers
- C. Control to the technology.
- D. Intellectual properties protected.

**Q13** How visioning helps your organization create strategic plan for years to come?

- A. Enable to identify the steps needed to get to the objective.
- B. Anticipating issues and problems ahead.
- C. Preparing the organization with healthy operational budget.
- D. Making sure everyone in the organization aware about the expectations.

**Q14** What is the definition of collaboration?

- A. Work side-by-side to share the same burden.
- B. Strategically sharing information and workload.
- C. Work together to achieve common goal.
- D. Divide job scopes according to expertise.

**Q15** As an engineer, you will include below in your inspection or trip report, except:

- A. Budget and timeline
- B. Report of accident
- C. Problem description
- D. Cause and effect discussion.

**Q16** The Ishikawa diagram is used \_\_\_\_\_

- A. To find solution of an issue
- B. To develop new product definition
- C. To relate effect and the possible cause
- D. To assess issues and formulate the solutions

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- Q17** What is the purpose of documentation from the perspective of a company?
- A. To record every event in the process.
  - B. To jot down important tips in a conversation.
  - C. To ensure important information are not forgotten.
  - D. To provide proof of traceability.
- Q18** As an engineer, who is conducting an engineering work, what should be in a progress report?
- A. Detail of project development.
  - B. Information regarding the stage of a development
  - C. Summary of project progress and what has been accomplished.
  - D. Report of all the work done.
- 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. Method
- Q20** Definition of Enterprise Resource Planning (ERP) system represent \_\_\_\_\_.
- A. entire organization
  - B. marketing and sales
  - C. production department
  - D. major departments only
- Q21** Which of the following statement emphasizes Total Quality Management (TQM) ?
- 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

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- 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 policy seeks standardization in terms of\_\_\_\_\_.
- A. procedures to manage quality
  - B. suppliers' specifications
  - C. production procedures
  - D. products
- Q25** According to theory, 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** Lean concepts have **FIVE (5)** processes. Which of the following statement 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** INTEL Sdn Bhd has discovered an over processing and defects in the production line. From your Point of view which of the management concept is suitable to be applied to address this issue?
- A. Lean Six Sigma
  - B. Control Qu ality
  - C. Plan Quality Management
  - D. Total Quality Management

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- Q29** The Six Sigma concept was first created by which of the following industrial companies?
- A. Honda
  - B. Iceland
  - C. Samsung
  - D. Motorola
- Q30** The establishment of 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** Identify which of these elements is **NOT** one of the constraints in project management?
- A. Cost
  - B. Team
  - C. Quality
  - D. Schedule
- Q32** Which of the following sequence represents 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 terms is **NOT** considered in defining the objectives?
- A. Scope
  - B. Cost
  - C. Human resources
  - D. Schedule
- Q34** Which of the following list shows the phases of a project life cycle?
- 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** A good project manager **SHOULD NOT** have which of the following skill set?
- 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** Project management objective or aim 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 known as\_\_\_\_\_.
- A. Gantt Chart
  - B. Milestone Schedule
  - C. Responsibility Matrix
  - D. Work Breakdown Structure
- Q39** Maintainability in Engineering Management term is defined as \_\_\_\_\_.
- 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 **DOES NOT** represent the input factors for (CP)?
- A. Customer
  - B. Milestone
  - C. Time estimates
  - D. Task dependencies



**Q41** As a Manager, which of 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 agiven \_\_\_ 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** According to Engineering Management Theory, 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** Which of the following maintenance 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** The frequency of maintenance will be \_\_\_ when the reliability of a product is \_\_\_.

- A. high, low
- B. low, high
- C. small, big
- D. big, small

- Q46** Which maintenance 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 do you think are the costs a company have to endure for 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 instrumentssuch as audio gauge and vibration analyzer.
- A. Periodic
  - B. Machine
  - C. Predictive
  - D. Instrument
- Q49** From your understanding, which of the categories list below is related to 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** Which of the following statement define the principal objectives in maintenance :
- 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** Planning is probably the most important of the identified managerial functions. It allow you to focus on how best to achieve the desired results.
- (a) Identify and explain **THREE (3)** importances of planning. (6 marks)
- (b) In addition to planning, leading, and motivating is also important for engineering management. Determine **THREE (3)** measures to motivate peoples. (4 marks)
- Q2** (a) Strategic planning is a process in which an organization's leaders apply in their company. With an aid of a diagram, briefly outline the concept of strategic planning, and the steps involved in implementing this technique in organizations. (4 marks)
- (b) There are many TQM tools and techniques that can help organization to identify, analyse and assess data that are relevant to their business. Provide **ONE (1)** quality management tool that is suitable to helps users identify the various factors (or causes) leading, to an effect. Then, explain in detail the characteristics of the chosen tool. (6 marks)
- Q3** (a) 'Kaizen' is a Japanese term meaning change for the better or also known as continuous improvement, is an important principle of Total Quality Management (TQM). It is a Japanese business philosophy that seeks to make never-ending improvements to the process of converting inputs into outputs in operations and involve all employees.
- Based on your understanding, describe in detail about the process for continuous quality improvement that can identify the most effective solution before implementation. (6 marks)
- (b) Tabulate the differences between continuous improvement and traditional approach (4 marks )

- Q4** In any project assignment, their consists of eleven activities, label as A to K. The duration (in days), and the activities preceding each of them as 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) Calculate the critical path in the network diagram. (1 mark)

- Q5** Before global companies make a strategic decision whether to invest in a country, they analyse key factors involving PESTLE (Politic, Economy, Sociology, Technology, Legal and Environment). Take politic as an example, how does political situation in a country would influence an investment decision? (10 marks)

**-END OF QUESTIONS -**