



Sri Lanka Institute of Information Technology

B.Sc. Honours Degree in Information Technology  
Specialized in Computer Systems and Network Engineering

Final Examination  
Year 2, Semester 2 (2019)

IE2090 – Professional Engineering Practices and  
Industrial Management

Duration: 2 Hours

October 2019

Instructions to Candidates:

- ◆ This paper is preceded by 10 minutes reading period. The supervisor will indicate when answering may commence.
- ◆ This paper has 4 questions.
- ◆ Answer all questions in the booklet given.
- ◆ The total marks for the paper is 100.
- ◆ This paper contains 4 pages, including the cover page.
- ◆ Electronic devices capable of storing and retrieving text are not allowed.
- ◆ Calculators are allowed.

Question 01

(25 Marks)

- a) List three (3) levels of management in an organization. (3 marks)
  - b) Identify the difference between effectiveness and efficiency. (2 marks)
  - c) Briefly explain the need of managers in an organization. (3 marks)
  - d) Apply your knowledge on managerial functions and roles to state “true” (T) or “false” (F) for each of the following statements. Provide answers in the booklet given.
    - i. Planning, organizing, monitoring and controlling are the functions of management (T/F)
    - ii. The most effective leaders treat everyone the same. (T/F)
    - iii. Planning functions involve analyzing information, setting goals, and making decisions about what needs to be done. (T/F)
    - iv. Organizing is a management process includes measuring results, comparing results to expectations, and taking corrective action to bring results in to line. (T/F)
    - v. Counselling and compensation of employees is part of leading. (T/F)
    - vi. Mintzberg managerial roles are divided into three (3) groups as interpersonal, informational and decisional. (T/F)
    - vii. John the manager communicates his department's resource needs to company headquarters. He is fulfilling spokesperson role of a manager (T/F)
    - viii. Figurehead role would be fulfilling when the head of an organization engaged in symbolic duties involving a legal and social nature. (T/F)
    - ix. Disturbance handler role is classified as an interpersonal role. (T/F)
    - x. A finance manager who reads the “Wall Street journal” on regular basis would be performing the figurehead role. (T/F)
- (10 marks)

- e) Fran is a manager of the Metro Bank. She has encountered with the following problem

Fran supervised the training department of Metro Bank. One of her star employee, Judy surprised Fran one day with a job-posting application. Judy wanted to transfer to another department where the employees made more money. And supposedly did less work. In the ensuing discussion, Fran learned that Judy was very unhappy with the merit increase she had recently received. Judy believed she could earn more money in the open position, which was three grades higher than the position she currently occupied.

Judy now functioned more as an administrative assistant than as the departmental secretary (the position for which she had been hired). Fran knew that the job evaluation system in use was valid and up-to-date, and that grade difference between Judy's job and the open position meant real differences in responsibilities, skill, and accountability. Fran did not want to lose Judy.

Assess the management qualities that "Fran" should have to solve situation. (7 marks)

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**Question 02** (25 Marks)

- a) Name two (2) types of goals used in goal setting. (2 marks)
- b) Briefly explain why strategic management is important to any organization. (4 marks)
- c) "Sometimes, decision making is the toughest exam. Either you pass or fail". Identify tools that assist teams for decision making (4 marks)
- d) Read the scenario to answer the following questions.

You have been newly appointed as team leader of a Management department consisting of 10 team members. The team has not been performing well in the past and your main aims are to consolidate team work and increase team performance.

- i. List four (4) stages of team building (4 Marks)
- ii. Identify suitable strategies/methods you would use to evaluate the team's performance? (5 Marks)
- iii. Justify leadership characteristics you should have to increase the team performance. (6 Marks)

**Question 03****(25 Marks)**

- a) Identify main characteristics of a project. (3 Marks)
- b) Compare functional, matrix and Projectized organizational structures. (6 marks)
- c) Cash flows of project A, B & C are given in the table 1. If the annual discount rate is 15%, find the best project using Net Present Value (NPV) method. (8 marks)

Table 1: Cash flow (in USD)

Project	Year 0	Year 1	Year2	Year3
A	-10 000	4 800	5 500	5 500
B	-15 000	9 000	5 500	6 000
C	-12 000	10 000	8 000	2 000

- d) Interpret how long it will take to recover the investment for each project given above and recommend the best project using payback analysis. (8 marks)

**Question 04****(25 Marks)**

- a) Identify the purpose of developing a network diagram for a project (3 Marks)
- b) Create a network diagram for the project "PayMe" with the details given in the table 2. (Time represented in weeks). (8 marks)

Table 2: Activity relationships and durations

Activity	Duration	Preceding activity
A	4	-
B	3	A
C	2	A
D	5	B
E	1	B,C
F	3	C
G	4	E,F
H	4	D,E
I	6	G,H

- c) Using backward / forward pass, identify project duration and critical path for the created network diagram. (4 Marks)
- d) An activity on the critical path of the ABC project was scheduled to be completed within 16 weeks, with the budget of Rs.800 000. 50% of project was planned to complete with the budget of Rs.400 000 on the 8<sup>th</sup> week. During the performance review, which took place at 8<sup>th</sup> week, it was found that 60% of the work had already been completed and that the actual cost was Rs 600 000.
  - i. Compute cost variance (4 marks)
  - ii. Justify current performance by calculating Cost Performance Index (CPI) (4 marks)
  - iii. Based on the performance, calculate estimated budget at completion (2 marks)

END OF THE PAPER.