

THE OPEN UNIVERSITY OF SRI LANKA
 FACULTY OF ENGINEERING TECHNOLOGY
 BACHELOR OF INDUSTRIAL STUDIES
 FINAL EXAMINATION 2009/2010



MEX5255–MAINTANANCE MANAGEMENT AND PROJECT MANAGEMENT

DATE : 18th March 2010
 TIME : 0930hours – 1230hours
 DURATION : 03 Hours

INSTRUCTIONS:

- Answer five questions including THREE from PART A and TWO from PART B.
- All questions carry equal marks.
- Please answer the questions in PART A and PART B on separate answer sheets. PART A has FOUR questions and PART B has FOUR questions.

PART-A

1.
 - i. Explain what is meant by “ORGANIZATION”.
 - ii. What are external and internal environmental factors of an organization?
 - iii. How does the public enterprise differ from a private enterprise?
 - iv. Effort of Maintenance department is not much appreciated compared to that of Production Department. Give reasons for this situation and explain how you will rectify this.
2.
 - i. Explain “Total Productive Maintenance” (TPM) concept. What are the benefits that can be achieved from this concept?
 - ii. Define the index performance of machinery and equipment in a plant. Mention the types of losses that could be minimized through TPM.

 In a factory the practical availability of equipment is only 90%. The output flow rate of product is reduced by 7% due to leakages and blockages in the system. The quality of goods produced below the accepted level is 6%. Determine the index performance of the machinery and equipment.
 - iii. How would you introduce TPM in your organization? Give a preliminary plan.

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3.
 - i. Human beings find it difficult to survive when the atmospheric pressure deviates from 1 atmosphere. (760 mm of Hg) Give reasons for this situation.
 - ii. What do you mean by "Decompression Sickness"? How will you control this situation?
 - iii. Explain under what circumstances, the humans are exposed to sources of ionization radiation. State the methods of controlling exposure to ionization radiation.

 4. Workers engaged in the gas turbine sector are invariably subjected to following health hazards.
 - Permanent Deafness
 - Skin Diseases
 - Respiratory Problems

Give reason for this situation.

Give a comprehensive plan to control the above situation and to keep the hazards at minimum level.

PART-B

1. The basic model of the project life cycle involves the stages classified as "plan" "do" "check" and "act". Identify examples of the criteria that may be assessed at the end of each stage.

2.
 - i) "Scheduling is one of the main concerns of a project manager". Discuss.
 - ii) Construct an activity on arrow network diagram of the activities given below:

Activity	Preceding activity	Duration
A	-	4
B	-	2
C	-	6
D	A	10
E	B	2
F	C,E	1
G	D	3
H	F	2
J	H,G	20
K	G	1

- iii) Determine the ESTs and LSTs, the project duration and indicate the critical path.

- 3. i) Briefly discuss factors to be looked into in a feasibility study? Illustrate your answer with examples.
- ii) A project proposal of intended cash flows with an internal rate of return 10% is as shown below. Comment on the financial viability of this project.

year	In cash flow	out cash flow
0	-	100,000
1	65,000	20,000
2	50,000	15,000
3	40,000	20,000
4	50,000	30,000
5	35,000	20,000

- 4. i) What are the advantages and disadvantages of matrix structure?
- ii) Critically analyze how matrix structure affects individual motivation? Substantiate your answer with examples.

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