

National Exams December 2012
11-CS- 4-Engineering Management
3 hours duration

Notes:

1. If doubt exists as to the interpretation of any question, the candidate is urged to submit with the answer paper, a clear statement of any assumptions made.
2. This is a Closed Book exam. No calculators are allowed for this exam.
3. Any five questions constitute a complete paper. Only the first five questions as they appear in your answer book will be marked.
4. All questions are of equal value.
5. Write your answers in point-form whenever possible, but fully.

Marking Scheme (marks)

1. (i) 6, (ii) 7, (iii) 7
2. (i) 6, (ii) 7, (iii) 7
3. (i) 6, (ii) 7, (iii) 7
4. (i) 7, (ii) 6, (iii) 7
5. (i) 8, (ii) 6, (iii) 6
6. (i) 7, (ii) 7, (iii) 6
7. (i) 5, (ii) 5, (iii) 5, (iv) 5

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1. (i) State the steps followed in the marketing research/analysis process for identifying target markets.
(ii) State the basic tools and techniques used in risk analysis, related to bringing a new product or service to the market.
(iii) What are the questions generally asked in performing a comprehensive strategic planning process for a new product or process?
2. (i) Name the factors that must be considered in the design for manufacturability of a product.
(ii) What is your understanding of lean manufacturing? State the objectives of lean manufacturing?
(iii) Explain the objectives of: (a) total quality management (TQM) and (b) six sigma.
3. (i) Briefly state the project management techniques used in a new product, process or service development.
(ii) State the basic steps followed in managing a project.
(iii) State the techniques used for a successful project planning and the reasons for project failure.
4. (i) State the components of a balance sheet and define each component.
(ii) Financial analysis is used to determine whether a given project merits the requested funding. Explain briefly the engineering economic analysis techniques used for the purpose.
(iii) Explain the concepts of: (a) just-in-time (JIT) inventory control, (b) materials resource planning (MRP) and (c) manufacturing resource planning (MRP II).
5. (i) What is your understanding of: (a) McGregor's Theory X and Theory Y, (b) Maslow's Hierarchy of Human Needs and (c) Herzberg's Motivator- Hygiene Concept?
(ii) Explain Skinner's Operant Conditioning Theory with particular reference to the use of positive and negative reinforcement to motivate employee behavior,
(iii) What is your understanding of: (a) high-producing organization, (b) low-producing organization and (c) high-producing managers?
6. (i) Explain the difference between management and leadership.
(ii) Describe the traditional and non-traditional methods employers use to recruit new employees.
(iii) What are the requirements for managing a diverse workforce?

7. The 3M Company is often used as a great example of a company that encourages creativity. Its policy dictates that 30 percent of annual sales come from products less than four years old. But 3M wasn't always that progressive. Answer the following questions:
- (i) Do large companies find it difficult to innovate because they resist change? Is it because they are big or because they are afraid of the unknown? Why is that?
 - (ii) Do smaller companies do better at innovation because they are not so risk averse? Is that because most of them are private companies and not so accountable to outside shareholders?
 - (iii) Can you see any connection between innovation and continuous improvement (CI)? Does CI require innovation?
 - (iv) If you were vice-president in charge of production at a big company, how would you encourage innovation?