

**National Exams December 2017**

**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) 7, (ii) 7, (iii) 6
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) 7, (ii) 6, (iii) 7

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1. (i) What is the purpose of trend analysis? State the major forces that influence trends.  
(ii) Explain briefly the characteristics of the following forecasting models: (a) time series models, (b) moving average and (c) exponential smoothing.  
(iii) State the questions generally asked in conducting technology assessment or audit.
2. (i) State the characteristics a change leader should possess to manage change successfully.  
(ii) What guidelines should be followed to create an environment of change in a company?  
(iii) Explain the factors that contribute resistance to change in a company.
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. An internationally recognized author has noted that of your manager want high performance from your employees, look first at the atmosphere in your company before you start thinking about “changing each individual employee”. The author further noted that most firms create a “stifling atmosphere in which employees feel constrained, controlled and forced to comply with a rigid contract that govern their behavior”. Now that “information, knowledge and expertise” have become just as importance as capital in the past, emphasis has shifted from the corporation to the individual.
- (i) Do you find it surprising that senior executives have to be reminded of these things? How come they are not already aware of this issue since it has been actively discussed in business schools and business periodicals for some years?
  - (ii) Why are companies so slow to adapt to new conditions? Don't they want a better motivated workforce?
  - (iii) is it possible that corporations concentration on downsizing in recent years has blinded them to the changes needs of their remaining employees and managers?