

**B.Tech. Civil (Construction Management) /
B.Tech. Civil (Water Resources Engineering) /
B.Tech. (Aerospace Engineering)**

Term-End Examination

00812

December, 2016

**ET-524(A)/ET-534(A) : PRINCIPLES OF ENGINEERING
MANAGEMENT AND ECONOMICS**

Time : 3 hours

Maximum Marks : 70

***Note :** Attempt **five** questions in all. Question no. 1 is **compulsory**. Attempt any **four** questions out of the remaining six questions.*

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1. (a) What is Linear Programming ? What requirements are to be met before its application ? What are the assumptions under linear programming ? 6
- (b) A firm is engaged in producing two products, A and B. Each unit of Product 'A' requires 2 kg of raw materials and 4 labour hours for processing, whereas, each unit of Product 'B' requires 3 kg of raw materials and

3 hours of labour of the same type. Every week the firm has an availability of 60 kg of raw materials and 96 labour hours. One unit of Product 'A' sold gives yield ₹ 40 and one unit of Product 'B' sold gives ₹ 35 as profit. Formulate this problem as a linear programme and determine graphically as to how much units of each of the products should be produced per week so that the firm can earn the maximum profit. Assume that there are no marketing constraints so that all that is produced can be sold. 8

2. (a) Define motivation. Explain briefly the following sources of motivation — positive, negative, extrinsic and intrinsic. 6
- (b) Discuss Maslow's need hierarchy theory and Herzberg's two-factor theory. What are the salient differences between the two ? 8
3. (a) Define quality. What are the driving forces for improvement of quality ? 6
- (b) Define acceptance sampling. What is an acceptance sampling plan ? What factors should be considered while designing it ? 8

4. (a) Define coordination. Explain with examples the following four principles of vertical coordination — chain of command, span of control, delegation, centralization-decentralization. 8
- (b) What do you understand by group norms, group values and group cohesiveness ? How can group cohesiveness be increased ? 6
5. (a) What do you understand by Law of Demand ? Explain the demand elasticities based on demand determinants, with the help of examples. 8
- (b) Distinguish between authority and power. Explain the dynamics of power. 6
6. (a) Explain matrix type of project organization. What are its advantages over the other type of organisations ? 7
- (b) Explain CPM as a project scheduling technique. 7
7. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2}$
 - (a) Decision-making Process
 - (b) Time Value of Money
 - (c) Managerial Grid
 - (d) ISO Certification
 - (e) Value Engineering