

**B.Tech 7th Semester Exam., 2021**

( New Course )

**COST MANAGEMENT OF  
ENGINEERING PROJECTS**

Time : 3 hours

Full Marks : 70

Instructions :

- (i) The marks are indicated in the right-hand margin.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question No. 1 is compulsory.

1. Answer any seven of the following questions :

2×7=14

- (a) Explain the term 'bounded feasible region' in the context of transportation problems.
- (b) In the context of the transportation problem, give the reason for imposition of non-negativity constraints.
- (c) List any two stages of project execution.
- (d) Briefly define the term 'differential cost'.
- (e) Which variable appears on the horizontal axis in the graphical approach to break-even analysis?

- (f) State two assumptions underlying break-even analysis.
- (g) State two advantages of the just-in-time approach.
- (h) Name the three time estimates used in PERT.
- (i) In the context of projects, define the term 'pre-operative expenses'.
- (j) Briefly explain the purpose of a bill of material.

2. What is zero-based budgeting? State two advantages and two limitations each of this technique of budgeting. 14

3. Explain the Hungarian method for solving assignment problems. 14

4. Obtain the solution of the following linear programming problem graphically and state the corner points : 14

$$\text{Maximize } Z = 3x + 4y$$

subject to the constraints

$$x + y \leq 4$$

$$x \geq 0$$

$$y \geq 0$$

5. Write a note on the different stages of project execution. 14

6. Explain in detail any one of the following methods of selective inventory control, giving advantages and limitations of each : 14
- (a) ABC analysis
- (b) VED analysis
7. In the context of project network analysis, explain the similarities and differences between PERT and CPM. 14
8. Explain marginal costing. 14
9. Given the following information :
- Fixed expenses—₹ 90,000
- Variable cost per unit includes the three components as below : <https://www.akubihar.com>
- Direct material—₹ 5
- Direct labour—₹ 2
- Direct overheads—100% of direct labour
- Selling price per unit—₹ 12
- You are required to calculate—
- (a) P/V ratio;
- (b) break-even sales in rupees with the help of P/V ratio;
- (c) sales in rupees required to earn a profit of ₹ 1,50,000. 14

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