

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 41062

B.E/B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Eighth Semester

Mechanical Engineering

080120074 – PRODUCTION PLANNING AND COST ESTIMATION

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define JIT.
2. What do you understand by the term aggregate production planning?
3. What do you mean by costing?
4. List the functions of estimation.
5. Write the importance of depreciation.
6. List the elements of prime cost.
7. Mention various losses in forging.
8. What is the need to include allowances in cost estimation?
9. How can you calculate the labour cost for a turning process in lathe?
10. List out the elements of drilling cost estimation.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss about any TWO times series forecasting models with examples. (16)

Or

- (b) (i) Explain with appropriate example about Kanban PULL system. (8)
- (ii) Discuss about material requirement planning. (8)

12. (a) (i) Differentiate between costing and estimation. (8)
(ii) Discuss about determination of material and labour cost. (8)

Or

- (b) Explain about estimation procedure for an industrial product. (16)
13. (a) Discuss in detail about the computation of price of a product using the ladder of cost with appropriate example. (16)

Or

- (b) A CNC machine has been purchased for Rs. 2,50,000 and manufacturer claimed that the machine life will be 20 years. At the end of the life, the resale value is Rs. 40,000. If the depreciation is charged by reducing balance method, determine the accumulation of fund after 3 years. If the yearly depreciation factor has been taken as rate of interest what will be the accumulated depreciation fund after 3 years using sinking fund method. (16)
14. (a) A bar stock of 30 mm dia and 2 meter long is to be converted to (i) Square bar of 30 mm side; (ii) Hexagonal bar of 30 mm side; (iii) Rectangular bar of sides 30 mm × 20 mm. Calculate the length of bar made in each case. Assume hand forging and 2% losses. (16)

Or

- (b) Determine the selling price of a valve component weighing 500 kgs with the following data : (16)
- (i) Density of the cast iron material = 7.2 gm/cc
(ii) Cost of the molten iron at cupola = Rs. 25 per kg
(iii) Process scrap = 17% of net weight
(iv) Scrap return value = Rs. 11 per kg
(v) Admin and sales OH = Rs. 50 per piece
(vi) Profit = 10% of total cost

Activity	Process Time/valve(min)	Labour cost/valve (Rs)	Shop OH/hr (Rs)
Moulding and pattern making	72	26	42.5
Core making	96	24	35
Felting and cleaning	120	27.5	30

15. (a) (i) Explain about the estimation of grinding time for a cylindrical grinding operation. (8)
- (ii) Determine the time required to rough grind a 25 cm shaft of bronze from 40 mm diameter to 38 mm diameter using a grinding wheel of 50 mm face width. Assume cutting speed as 20 m/min and the depth of cut as 0.2 mm/pass. (8)

Or

- (b) (i) Determine the added table travel in milling operation. (8)
- (ii) A 80 mm diameter plain milling cutter having 6 teeth is used to face mill a block of aluminium 200 mm long and 30 mm wide. The spindle is 1500 rpm and feed is 0.125 mm/teeth/rev. find the cutting time. (8)
-