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Question Paper Code: 59713

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

Elective

Mechanical Engineering

15UME913 – PROCESS PLANNING AND COST ESTIMATION

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Assume that observed time for an operation is 0.7 minutes. The rating of the operator is found to be 120. What is the basic time? CO1- U
(a) 0.84mts (b) 8.4mts (c) 84mts (d) 0.48mts
2. The standard time for a job is CO1- U
(a) Base time + relaxation time (b) Total work content + basic time
(c) Total work content (d) Total work content + delay contingency allowance
3. Which is the type of process planning approaches? CO2-R
(a) Mechanical systems (b) Manual and computer aided systems
(c) Management systems (d) Process management systems
4. Calculation of part processing time requires determination of sequence of processing steps on each machine, is called as CO2- R
(a) Out planning (b) In Planning (c) Planning (d) Sequencing
5. Calculation of product cost, gathering information for planning and analyzing information for decisions making are features of CO3- U
(a) Information accounting (b) Cost accounting
(c) Analyzing accounts (d) Analyzing account
6. A costing system, which focuses on individual activities as particular cost object is classified as CO3- R
(a) Activity based costing (b) Improved costing
(c) Learned improvements (d) Positive effectiveness

7. Factory cost is sum of CO4- U
- (a) Prime cost + Factory overheads (b) Direct cost + Labor cost
- (c) Direct material cost + Direct labor (d) Direct cost + Prime cost
8. An analysis and estimation method of cost, by classifying cost accounts as fixed or variable with respect for specific output level is considered as CO4- R
- (a) IE Manufacturing analysis method (b) Price analysis method
- (c) Unit analysis method (d) Account analysis method
9. To calculate the probable cost of the product, knowledge of following factors involves CO5- U
- (a) Production time is not required
- (b) Unnecessary of previous estimates of comparable parts
- (c) Effect of change in facilities on costing rates
- (d) Machining time is not required
10. Locate the center of gravity for a semicircle CO5- U
- (a) $Y = 4r/3\pi$ (b) $Y = 2r/3\pi$ (c) $Y = d/2$ (d) $Y = 2d$

PART – B (5 x 2= 10 Marks)

11. What are the objectives of work measurement? CO1- U
12. List the objectives of process planning. CO2- R
13. Distinguish between cost estimation and cost accounting. CO3 -U
14. Give the methods of costing CO4 -R
15. List out the losses to be considered in estimating the gross weight of a forging component CO5 -U

PART – C (5 x 16= 80 Marks)

16. (a) Explain in detail about various types of work measurement. CO1- U (16)
- Or
- (b) (i) What do you mean by ERGONOMICS? CO1- U (4)
- Explain the applications of ergonomics in the following areas:
1. Working environments CO1- U (6)
2. The work place CO1- U (6)
17. (a) Explain briefly the factors considered for selection of Equipments for process planning? CO2- U (16)

Or

- (b) Name and explain the commonly used tools, which are required for the development of manufacturing logic and knowledge. CO2- U (16)
18. (a) Write the objectives of cost estimation and Discuss the advantages of cost accounting. CO3- U (16)
- Or
- (b) What are the various elements of cost? Briefly explain each element in detail with suitable examples. CO3- U (16)
19. (a) Describe the various allowances in estimation with suitable justification. CO4- U (16)
- Or
- (b) Write short notes on CO4- U (16)
- (i) Collection of cost, and
- (ii) Allowances in estimation.
20. (a) Explain the various losses consider while calculating the material cost for a forging components. CO5- U (16)
- Or
- (b) (i) Discuss briefly the various elements considered while calculating the cost of a welded joint. CO5- U (8)
- (ii) Explain the direct material cost and direct other expenses in costing of welded joint. CO5- U (8)

