



C14-M-503

4651

BOARD DIPLOMA EXAMINATION, (C-14)

JUNE—2019

DME—FIFTH SEMESTER EXAMINATION

ESTIMATING AND COSTING

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. State any three examples for (a) factory overhead and (b) administrative overhead.
2. What are the causes of depreciation?
3. Write any three objectives of estimation.
4. What are the operations that are performed on Lathe?
5. Write down the formula for calculating machining time for drilling.
6. Give the formula for calculating the volume of (a) frustum of cone, (b) sphere and (c) cone.
7. How do you estimate the cost of arc welding?
8. List out various forging losses.

9. Differentiate between smith forging and drop forging.

10. List out the indirect materials used in foundry.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

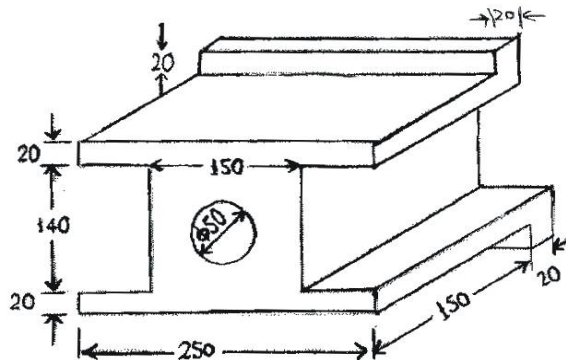
(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. A certain product is produced in lots of 1000. The direct material cost and labour cost are ₹1,500 and ₹2,500 respectively and works on cost is 10% of the direct labour cost. If the other indirect expenses are 50% of the factory cost, determine the selling price of each product to realise a profit of 15% of selling cost.

12. (a) A machine of initial cost of ₹50,000 is to be overhauled two times during the life of 12 years. On each overhauling a sum of ₹1,000 is spent. Calculate the depreciation per year, if the residual cost of the machine after 12 years is ₹1,000.

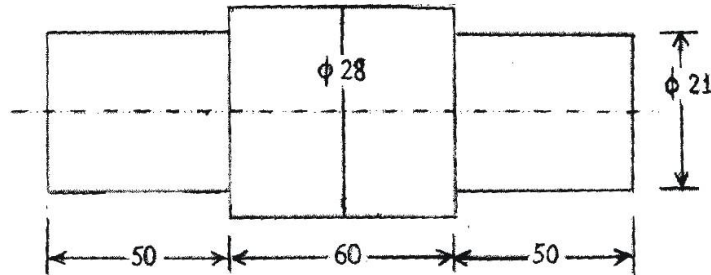
(b) Write a brief note on time allowances.

13. Calculate the material cost of the slide block as shown in figure. The weight of the material is 7.2 gm/cm^3 and 1 kg of material costs ₹25.



*

14. Find the time required to turn 35 mm dia bar to the dimensions as shown in figure below. Cutting speed is 15.4 m/min and Feed is 1 mm/rev. All cuts are 3.5 mm deep.



All dimensions are in mm

15. (a) Estimate the machining time to turn a MS bar of 3 cm dia. down to 2.5 cm for a length of 10 cm in a single cut. Assume cutting speed = 30 m/min and feed = 0.4 mm/rev. 5
- (b) Determine the volume of solid of revolution of circular fillet about X-X axis at a distance of R from CG. 5

16. Two 1 m long MS plates of 10 mm thick are to be welded by a lap joint with the help of 6 mm electrode. Assume the following data and calculate the cost of welding :

- (a) Current used = 250 amperes
(b) Voltage = 30 V
(c) Welding speed = 10 m/hr
(d) Electrode used = 0.5 kg/m of welding
(e) Labour charges = < 15/hr
(f) Power charges = < 1 per kWh
(g) Cost of electrodes = < 15/kg
(h) Machine efficiency = 60%

17. 1000 MS Pins of 4 cm dia and 10 cm length are to be drop forged from a bar stock of 5 cm diameter. Calculate the material cost, if bar is available at < 40/m length, assuming all the possible losses.

18. Explain various types of Pattern making allowances used in Foundry.

*