* 3781 *

C09–M–603

3781

BOARD DIPLOMA EXAMINATION, (C–09)

OCT/NOV—2014

DME—SIXTH SEMESTER EXAMINATION

INDUSTRIAL ENGINEERING, 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. List out the advantages of work sampling.

2. What is the purpose of work study?

3. What is quality of design?

4. List out the objectives of inspection.

5. What is the meaning of estimating?

6. List out the elements of costing.

7. How do you estimate the weight of a material?

8. What is the purpose of calculating the machining time?

9. What is the principle of oxyacetylene gas welding?

10. Define the terms 'net weight' and 'gross weight'.

PART—B

10×5=50

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

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

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

11. Describe the equipment used in time study.

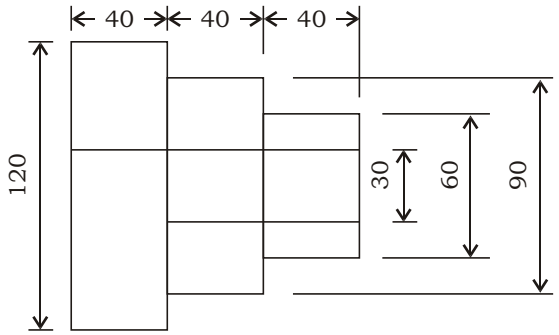
12. Explain in detail the steps involved in method study.

13. Explain the advantages and disadvantages of floor inspection and centralized inspection.

14. What are the constituents of estimation? Describe them in brief.

15. A certain product is manufactured in batches of 300. The direct material cost for this batch is found to be ₹ 70. Direct labour cost is ₹ 50 and overhead expenses are ₹ 50. If the selling expenses are 50% of the factory cost, what will be the selling price of each product to earn the profit of 15% of the selling cost?

16. Estimate the weight of the CI used in the manufacturing of a stepped pulley shown in Fig. 1. Density of CI is 7·2 gm/cc :



All dimensions are in mm

Fig. 1

17. Find the time taken to machine a job as per the dimensions shown in Fig. 2 from a bar of 3·5 cm diameter and 6 cm long. Assume the following data :

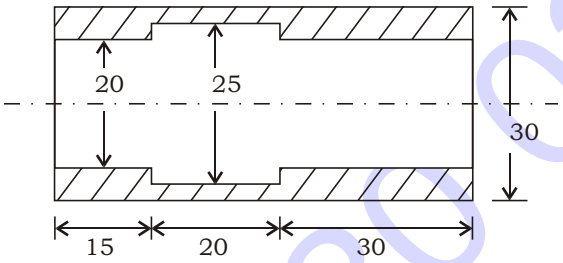
Cutting speed for turning and boring = 20 m/min

Cutting speed for drilling = 30 m/min

Feed for turning and boring = 0·2 mm/rev

Feed for drilling = 23 mm/rev

Depth of cut, not to exceed = 3 mm



All dimensions are in mm

Fig. 2

18. Two one-meter long MS plates of 10 mm thickness are to be welded by lap joint with 6 mm electrode. Calculate the cost of welding. Assume the following data :

(i) Current speed = 250 amp

(ii) Voltage = 30 volts

(iii) Welding speed = 10 m/hr

(iv) Electrodes used = 0·1 kg/m of weld

(v) Labour charges = ₹ 2 per hour

(vi) Power charges = ₹ 0·20 per hour

(vii) Cost of electrodes = ₹ 35 per kg

(viii) Efficiency of the machine = 60%

★ ★ ★