1272

Code : 15ME61T

Register Number

VI Semester Diploma Examination, Nov./Dec. 2018

ESTIMATING & COSTING

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Part – **A**.
(ii) Answer any **seven** questions from Part – **B**.
(iii) Assume missing data suitably.

PART – A

1. List any five essential qualities of an estimator. 5

2. Explain the sources of errors in estimating. 5

3. Draw a block diagram to illustrate the relation between elements of cost and components of cost. 5

4. Draw a diagram to illustrate the breakeven point. 5

5. Define cutting speed, feed and depth of cut for lathe operation. 5

6. Explain the procedure of estimating the machining time for milling operation. 5

7. Find the time required for shaping a block of 40 cm × 20 cm size in two cuts. Assume a feed of 0.6 mm/stroke and cutting speed of 15 m/min. 5

8. Explain any five sheet metal operations. 5

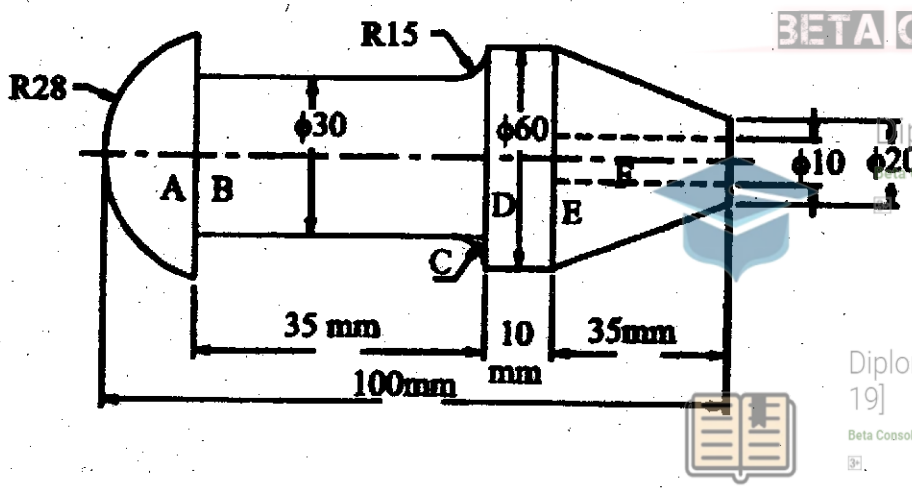
9. Explain the pattern allowances. 5

[Turn over

PART – B

10. An industrial plant with an initial value of ₹ 20,000 and salvage value of ₹ 2,000 at the end of 20 years, and is sold for ₹ 14,500 at the end of 10 years. What is the profit or loss if sinking fund depreciation method at 8% compounded annually is adopted ? **10**

11. Determine the weight of 100 articles of mild steel as shown in fig. Take density of mild steel as 7.8 gm/cc. **10**



12. The catalogue price of a milling m/c is ₹ 18,000 and allowable discount to the distributor is 20% of catalogue price. The sum of administrative and selling expenses is equal to the factory cost. The material cost, labour cost and factory overheads expenses are in the ratio of 1 : 3 : 2. If the cost of labour on the manufacturing of the m/c is ₹ 3,000. Determine the profit or loss realized in each milling machine. **10**

13. A 30 × 6 cm C.I. surface is to be faced on a milling m/c with a cutter having a diameter of 10 cm and 18 teeth. If the cutting speed and feed are 40 m/min and 6 cm/min respectively. Determine the milling time, rpm of cutter and feed/tooth. **10**

14. A 15 cm long M.S. bar is to be turned from 4 cm diameter in a single cut in such a way that for 5 cm length its diameter is reduced 3.8 cm and remaining 10 cm length is reduced to 3.4 cm. Estimate the total time required for turning it, assuming cutting speed as 30 m/min, feed as 0.02 cm/rev and time required for setting and mounting of the job in a three jaw chuck is 30 sec. Neglect the tool setting time. **10**

5. Estimate the material cost for linear welding of two flat pieces of M.S. 45 cm × 6 cm × 1 cm size at an angle of 90° by gas welding on both sides. Neglect edge preparation cost and assume **10**

(i) Cost of oxygen = ₹ 10/m^3

(ii) Cost of acetylene = ₹ 60/m^3

(iii) Density of filler metal = 7 gm/cc

(iv) Cost of filler metal = ₹ 12/kg

From the table for 10 mm thick plate

(i) O_2 consumption = 0.7 m^3/hr

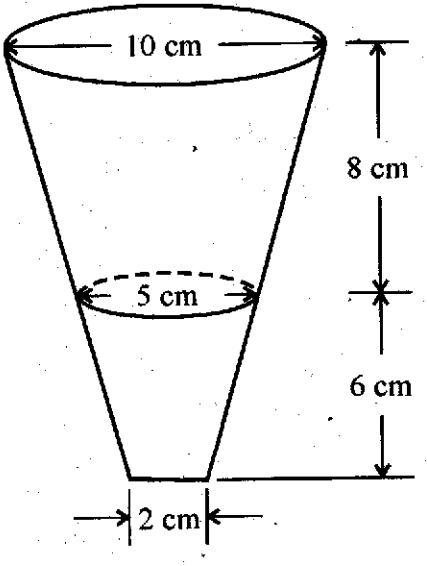
(ii) C_2H_2 consumption = 0.5 m^3/hr

(iii) Filler rod diameter = 5 mm

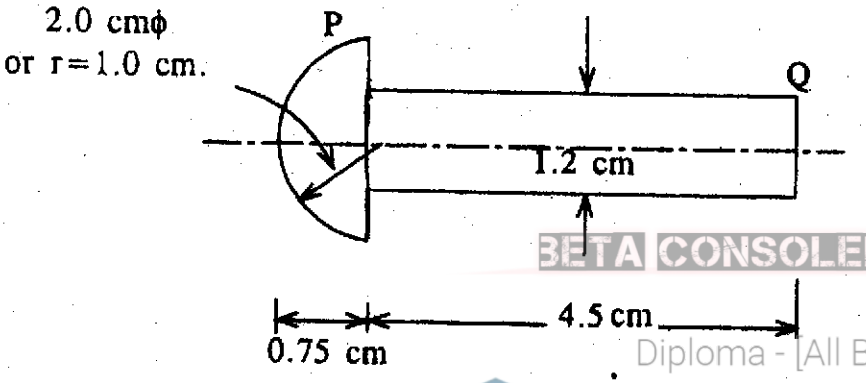
(iv) Length of filler rod required = 4.5 m/m of welding

(v) Welding time = 30 min/m of welding

16. Estimate the cost of metal sheet for preparing a funnel as shown in fig. Assume the wastage of metal as 10% and cost of the sheet as ₹ 30/m^2. **10**



17. Estimate the length and weight of 12 mm diameter stock required to hand forge 1000 snap head rivets of 1.2 cm diameter shank 0.75 cm height of head and segment of head forming from the sphere of 2 cm dia. Assume density as 8 gm/cc, scale loss as 6% and shear loss 5%. What is the length of rivet shank ? 10



18. Find the cost of 1000 C.I. pulleys as shown in fig. using the following data :

(i) Cost of material ₹ 20/kg

(ii) No. of moulds prepared by a pair of workers per day = 25

(iii) Wages paid to the moulder per day = ₹ 40

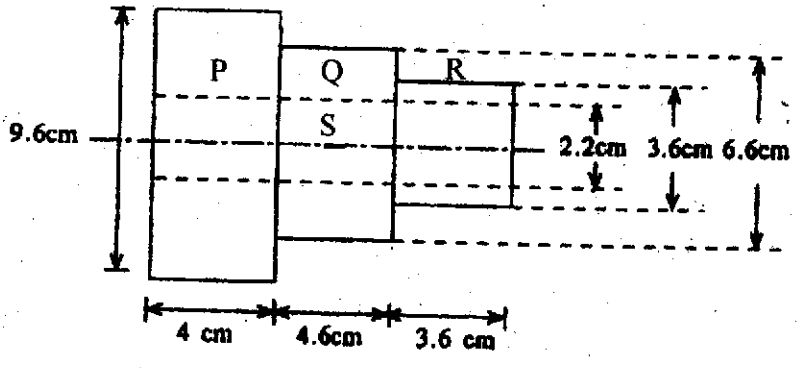
(iv) Wages paid to the helper per day = ₹ 25

(v) Density of C.I. = 7.2 gm/cc

(vi) Overhead charges = 30% of metal cost

(vii) Melting charges = 20% of metal cost

The pattern is supplied by the customer itself and all the surfaces are machined after casting. Machining allowances on each side may be taken as 2 mm. 1



19. (a) Explain the concept of incentives. 5

(b) Write the comparison between manual tendering with E-tendering system. 5