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4651

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH /APRIL-2019
DME - FIFTH SEMESTER EXAMINATION
ESTIMATING & COSTING

Time: 3Hrs

Max.Marks: 80

PART - A**10x3=30M**

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

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| 1) List any six Constituents of Estimation. | ½x6=3 |
| 2) State any three objectives of costing. | 1x3=3 |
| 3) Write any three causes for Depreciation. | 1x3=3 |
| 4) Write the formulae for finding the volume of | 1+1+1 |
| a) Cone b) Segment of sphere c) Frustum of pyramid | |
| 5) Find the rpm for turning a steel shaft of diameter 40 mm at a cutting speed of 30m/mm | 3 |
| 6) Define a) Cutting speed b) Feed c) Depth of cut | 1+1+1 |
| * 7) List out any three elements which makeup the total arc welding cost. | 3 |
| 8) List any three forging losses. | 1x3=3 |
| 9) List any six forging methods. | ½x6=3 |
| 10) List the six steps for making Castings in foundry. | ½x6=3 |

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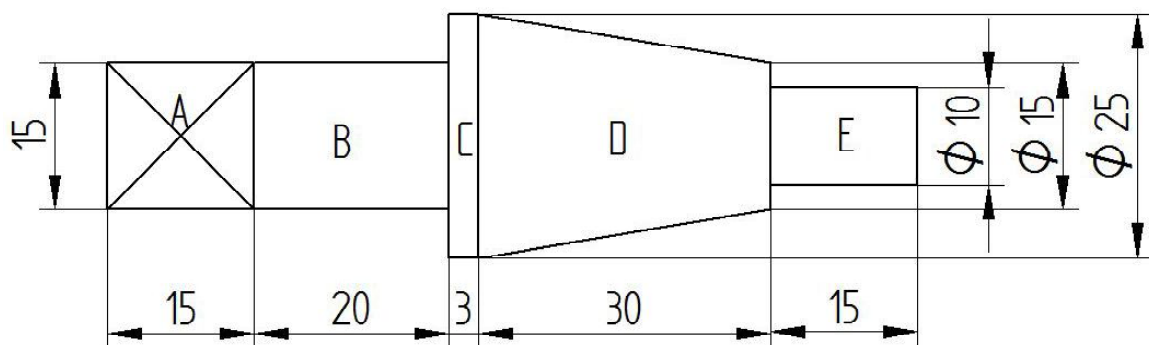
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PART-B

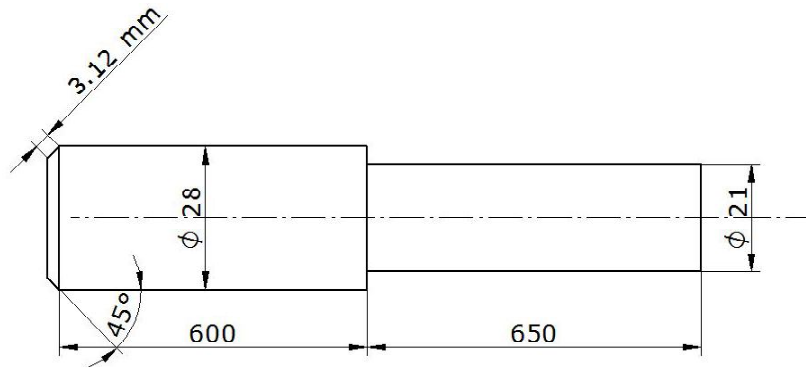
5x10=50M

Instructions: 1) Answer any **five** questions.
2) Each question carries **ten** marks

11. a) Write any five functions of Estimation. 5M
- b) A machine was purchased for Rs. 40,000 and Rs. 5000 was spent for its erection. The residual value after ten years of its useful life was Rs 5000 using straight line method of Depreciation.
- i) Calculate the annual rate of depreciation.
- ii) Determine the depreciation fund collected at the end of 6 years.
- iii) If after 7 years of running some parts are replaced at the cost of Rs3000 What will be the new rate of depreciation? 2M+1M+2M
12. The Market price of a machine is Rs 6000 and the distributor is allowed a discount of 20% of the market price. It is found that the selling Expenses are 50% of factory cost. The Material cost, Labour cost and factory overheads are in the ratio 1:3:2. If the labour cost is Rs1200, determine the profit on each machine? Neglect other overheads. 10M
13. Determine the cost of brass casting shown in figure. Density may be taken as 8.6 grams/cc and brass cost may be taken as Rs 60 per Kg. All dimensions are in mm. 10M

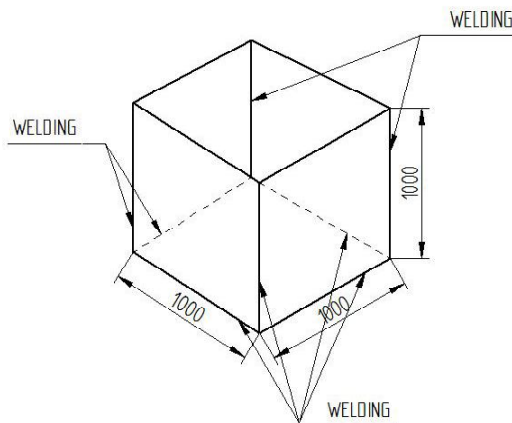


14. Estimate the time required to reduce a 35 mm bar to the dimensions shown in figure below. Take cutting speed as 16.5 m/min and speed as 1mm/rev. Assume all cuts* are 3.5 mm deep. 10M



ALL DIMENSIONS ARE IN MM

15. a) What is the effective cutting speed of a shaper. 4M
 b) A cast Iron rectangular block of 10 cmx3cm is required to be shaped to reduce the thickness from 1.5 cm in one cut. Determine the time required for shaping, if cutting speed is 20m/min and feed is 0.2 cm/stroke. Return time to cutting time ratio is 1:4. 6M
16. The figure shows an open tank of size 1000mmx1000mm x1000mm made from a 5 mm thick sheet which is to be fabricated by welding from both inside and outside. Find out the estimated cost of manufacturing one such tank on the basis of following data. All dimensions are in mm.



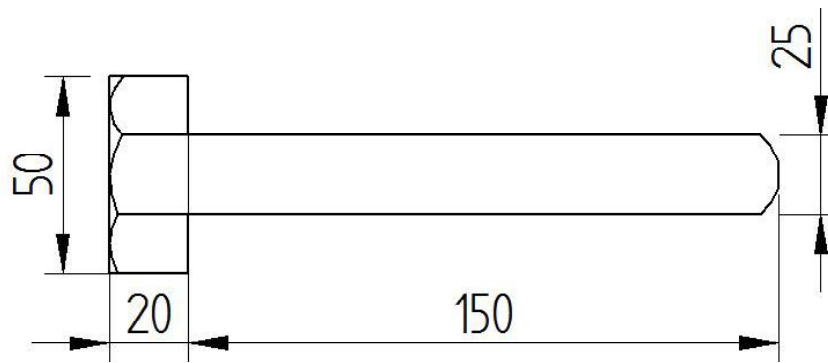
Materials:

Size of M.S sheet available	=	1000 mmx1000 mmx5 mm thick
Cost of M.S sheet	=	Rs2000per ton
Power consumption	=	1.5kwh per 250 mm of weld
Power cost	=	Rs.2per kwh
Cost of electorode	=	Rs.3 per 250 mm of weld
Density of M.S	=	0.0078 kg/cm ³

Labour:

Welding charges	=	Rs.5 per hour
Welding time	=	10 minutes per 250 mm of weld
Overhead charges	=	100% on labour

17. Calculate the length of stock required to forge 50 Ms bolts as shown in figure. The bolts are to be made from 3 cm dia bar stock. Consider hand forging losses. 10M

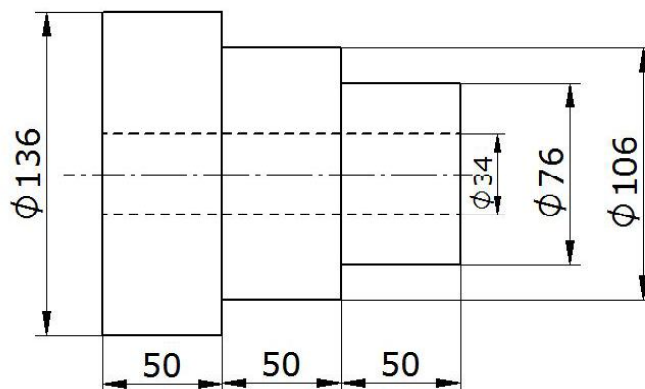


ALL DIMENSIONS ARE IN MM

18. A C.I. Pulley is shown in figure. Estimate the cost of 200 C.I. Pulleys using the following data.

Cost of metal	=	RS 10 per kg.
Moulds prepared by each worker per day	=	20
Melting charges	=	20% of metal cost.
Machining allowance on each side may be taken as		2 mm.
Wages to each moulder	=	Rs 20 per day.
Density of C.I.	=	7.2 grams /C.C
Over head charges	=	25% of metal.
Pattern is supplied by the consumer.		

10M



ALL DIMENSIONS ARE IN MM

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