17557

11718

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(3) Figures to the ***right*** *indicate* ***full*** *marks.*
(4) Assume suitable data, if ***necessary****.*
(5) Use of Non-programmable Electronic Pocket Calculator is ***permissible****.*

Marks

1. Attempt **any five** : **20**

a) What is depreciation ? Write its causes.
b) Explain the various forging operations to appropriately shape a material by forging.
c) Write the functions of estimator.
d) What is average price method ? Explain its significance.
e) What are the different types of overheads ? Explain any one.
f) How capacity of power press is determined ?
g) Write the procedure of job order costing.

2. Attempt **any two** : **16**

a) What are the qualities of estimator required to prepare an estimate ?

b) Calculate the number of rivets of dimensions shown in fig. 1 which can be manufactured from 4 kg of M. S. Assume that there is no wastage of material. Density of M.S. is 8 gm/cc.

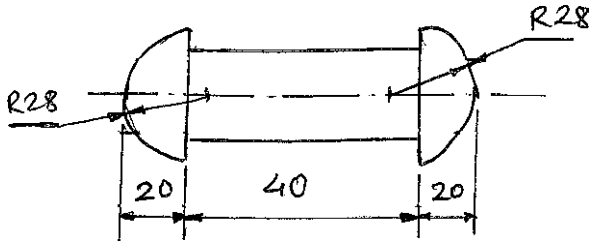

Fig. 1

c) The estimated life of a lathe is 10 years and it works 16 hrs a day. The initial cost of lathe is Rs. 1,00,000/- and scrap value after 10 years is Rs. 25,000/-. If the machine works for 5840 hrs in a year. Calculate the rate of depreciation charged annually as per machine hour basis method.

P.T.O.

Marks

3. Attempt **any two**: **16**

a) Calculate volume of material for funnel shown in fig. 2 taking 150 mm and 15 mm as the mean diameters of the top and bottom rings respectively. Consider the thickness of MS sheet to be 2 mm.

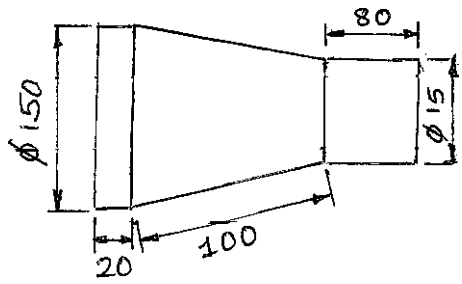

Fig. 2

b) Find the time required for doing rough grinding of a 160 mm long steel shaft to reduce its diameter from 42 to 40 mm in a grinding wheel of 20 mm face width. Assume cutting speed as 16.5 m/min and depth of cut as 0.25 mm.

c) Calculate the gross weight of the mild steel bolt shown in fig. 3, if it is produced in a lot of 5000, if steel weighs 7.9 gm/cm^3 and the method used is upsetting. Also calculate the length of the bar required.

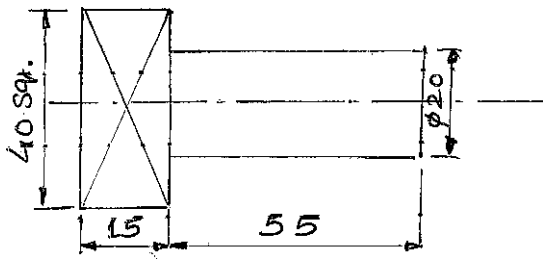

Fig. 3

(All dimensions are in mm)

4. Attempt **any two**: **16**

a) i) Define costing. State its objectives.

ii) Explain fixed price method.

Marks

b) Find the time required to turn 35 mm diameter bar to the dimensions shown in fig. 4. Cutting speed is 15.4 m/min and feed is 1 mm/rev. All cuts are 3.5 mm deep.

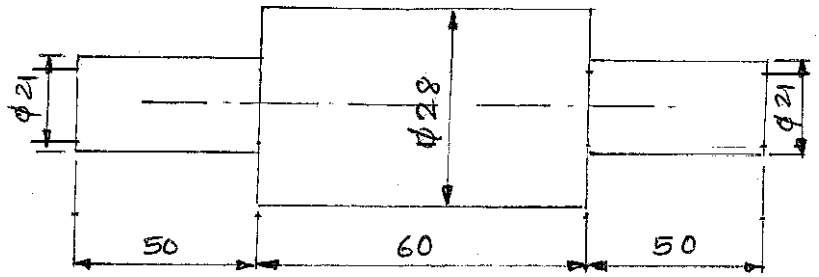

Fig. 4

(All dimensions in mm)

c) What are the factors to be considered while estimating erection cost ?

5. Attempt **any two** : **16**

a) i) Explain different forging losses.

ii) Explain the various forging operations to appropriately shape a material by forging.

b) i) Explain the importance of mensuration.

ii) Explain obsolescence and list major causes of obsolescence.

c) Estimate the material cost for welding 2 flat pieces of M.S. 15 × 6 × 1 cm size, at an angle of 90° by gas welding. Neglect edge preparation cost and assume

a) Cost of O_2 = Rs. 10/m^3

b) Cost of C_2H_2 = Rs. 60/m^3

c) Cost of filler metal = Rs. 12/kg

6. Attempt **any two** : **16**

a) i) What are the factors affecting welding costs and welding cost estimation ?

ii) Explain the preparation of blank layout for sheet metal production.

b) i) How to calculate selling price of a product ?

ii) Distinguish between costing and estimating.

c) i) What are the characteristics of process cost accounting ?

ii) Explain job order and process order costing.