



# 17557

11819

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are **compulsory**.*
  - (2) *Answer **each** next main question on a **new** page.*
  - (3) *Illustrate your answers with neat sketches **wherever** necessary.*
  - (4) *Figures to the **right** indicate **full** marks.*
  - (5) *Assume suitable data, if **necessary**.*
  - (6) *Use of Non-programmable Electronic Pocket Calculator is **permissible**.*
  - (7) *Mobile Phone, Pager and any other Electronic Communication devices are **not permissible** in Examination Hall.*
  - (8) *Use of Steam tables, logarithmic, Mollier's chart is **permitted**.*

**Marks**

1. Attempt **any five** of the following :

**20**

- a) State the meaning of costing and list objectives of costing.
- b) What are the different modes of material wastage ? How can material cost be controlled ?
- c) Describe functions of 'estimator'. How is quality of estimator determined ?
- d) What are the differences between costing and estimating ?
- e) Write the procedure of estimating erection cost.
- f) Describe any four forging losses.
- g) Describe 'cost flow chart in process costing'.

2. Attempt **any two** of the following :

**16**

- a) A manufacturing unit produces a typical product in batches of 1000 products per batch.

The following data shows different costs :

Direct material cost Rs. 2,50,000

Direct labour cost Rs. 4,00,000

Direct expenses Rs. 1,80,000

Factory expenses 60% of labour cost

Administrative expenses 120% of labour cost

Selling and distribution expenses Rs. 60,000

Determine prime cost, factory cost, manufacturing cost, total cost and selling price per product if desired profit is 10% of total cost.

**P.T.O.**



- b) Explain how valuation of material issued from store is done based on :
- i) First in-first out and
  - ii) Current value method.
- c) What are different wage plans or systems ? Explain piece rate and time rate systems.

Enumerate various forms of incentives. What is the effect of incentives on productivity and performance of the plant ?

**3. Attempt any two of the following :**

**16**

- a) State the meaning of the terms 'depreciation' and obsolescence. Explain causes of depreciation giving examples.
- b) A machine is purchased for Rs. 40,00,000/-. After 10 years the scrap value of the machine is estimated to be Rs. 4,00,000/-. Determine the depreciation fund, in reserve, at the end of fifth year based on 'the sum of the years digit method'.
- c) Write the general estimating procedure related to fabrication shop. Describe elements of 'tool cost'.

**4. Attempt any two of the following :**

**16**

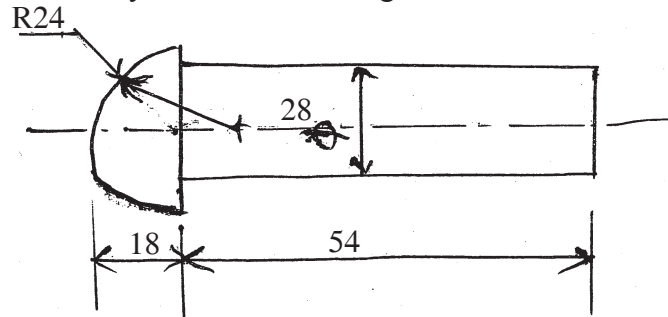
- a) A round bar of diameter 35 mm and 300 mm length is to be converted into a bar of hexagonal section of each side 16 mm, by hand forging. What will be the length of the forged hexagonal bar ? Take scale loss etc. = 6% of total.
- b) A round bar having diameter 25 mm and length 250 mm is to be turned to 21 mm diameter bar. State the parameters and their units on which the turning time will depend. Give the expression for the turning time calculation.
- c) 6 holes are to be drilled in a plate of mild steel. Each hole is to be of 15 mm diameter and 25 mm depth. If cutting speed is 20.4 m/min and feed is 0.15 mm/revolution, find the time required to drill all the 6 holes.



5. Attempt **any two** of the following :

16

- What are the factors affecting welding costs ? Write stepwise procedure to estimate gas cutting operation cost, considering various costs of elements.
- Figure No. 1 shows front view of a rivet. Determine the number of rivets as per the Figure No. 1, that can be produced from 5 kg of mild steel. Assume negligible wastage of material and density of mild steel as 8 g.cc.



All dimensions are in mm

Figure No. 1

- How is a power press specified ? Define capacity of power press. How is capacity of power press expressed ? Give one example. How is a power press selected for a particular application ?

6. Attempt **any two** of the following :

16

- Write stepwise procedure of sheet metal shop estimation. What is the meaning of blank layout ? What is the effect of blank layout on estimation ?
  - Enumerate various forging operations. What are the differences in hand forging and machine forging with respect to estimation ?
  - What are the contents of 'job cost sheet' ? Describe the characteristics of process cost accounting.
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