4E4144

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B. Tech. IV Sem. (Back) Exam., May - 2019
Mechanical Engineering
4ME5 Industrial Engineering
Common with Automobile

Time: 3 Hours **Maximum Marks: 80**
Min. Passing Marks: 24

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

UNIT- I

Q.1 (a) Define Industrial Engineering. Write the role of industrial Engineer and applications of industrial Engineering. [2+4+4=10]

(b) Differentiate between work study and productivity. [6]

OR

Q.1 (a) Write down the principles of motion economy. [8]

(b) Define Method Study and briefly discuss about any one method study chart. [2+6=8]

UNIT- II

Q.2 (a) What is scientific management? Write down the difference between management and Administration. [3+5=8]

(b) Explain Fayal's 14 principles of management. [8]

OR

Q.2 (a) Briefly discuss Taylor's principles of scientific management. [8]

(b) An industrial operation consists of five elements with following observed times and the performance ratings [8]

Element	Observed time (min.)	Performance rating (%)
1	0.15	80
2	0.20	85
3	0.10	90
4	0.12	75
5	0.25	80

Assume rest and personal allowances as 12% and contingency allowance as 4% of the basic time. Calculate standard time per piece.

UNIT- III

Q.3 (a) Explain about any four [4×4=16]

(i) Public limited Company

(ii) Private limited Company

(iii) Single Proprietorship

(iv) Co-operative Society

(v) Line, staff and committee organization

OR

Q.3 (a) Briefly explain the procedure of formation of Joint Stock Company and its merits and demerits. [8]

(b) Differentiate between equity shares and preference shares. [8]

UNIT- IV

Q.4 (a) Discuss about liquidity ratio, profit investment ratio, equity ratio and inventory ratio. [2+2+2+2=8]

(b) What is compound interest? Explain about compound interest factors. [3+5=8]

OR

Q.4 (a) Write about balance sheet and draw its format. [4+4=8]

(b) Discuss the difference between Rate of return and Internal rate of return. [8]

UNIT- V

Q.5 (a) Discuss the assumptions that are mode while plotting a break – even chart. [7]

(b) A factory producing only one item, which it sells for ₹ 12.50 per unit has a fixed cost equal to ₹ 60,000 and variable cost ₹ 7.5 per unit. Calculate- [3×3=9]

(i) The number of units to be produced to break even.

(ii) No of units to be produced to earn a profit of ₹ 12,000.

(iii) The profit, if 25,000 units are produced and sold.

OR

Q.5 (a) Define the concept of depreciation and explain the classification of depreciation. [4+4=8]

(b) An engine lathe was purchased for ₹ 20,000. Its useful life was estimated as ten years and the salvage value as ₹ 5,000. Using the diminishing balance method, calculate the depreciation ratio. Also estimate the depreciation fund at the end of two years. [2+3+3=8]