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Name of Examination : **Winter 2020** - (Preview)

Course Code & Course Name : **ME303 - Industrial Engineering and Management**

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Maximum Marks : **60**      Duration : **3 Hrs**

Edit   Print   View Answer Key   Close   **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. *All questions are compulsory.*
2. *Illustrate your answer with suitable figures/sketches wherever necessary.*
3. *Assume suitable additional data; if required.*
4. *Use of logarithmic table, drawing instruments and non programmable calculators is allowed.*
5. *Figures to the right indicate full marks.*

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**1)**    **Solve any two sub questions.**

a) Define industrial engineering. Explain tools and technique of industrial engineering.    [06]

b) Who is referred as father of scientific management? List down the contribution made by him in the growth of industrial engineering    [06]

c) Discuss briefly how each of the following departments can contribute to the effectiveness of the PPC function:    [06]
    i)   Sales department
    ii)   Personnel department
    iii)   Inspection and Quality control department

**2)**    **Solve any two sub questions.**

a) Enlist the important principles of a good layout and discuss any six of them in details.    [06]

b) What type of layout is most suitable for following industries? Why?    [06]
    i)   Building construction company
    ii)   Car assembly unit
    iii)   Engineering college workshop

c) Explain process layout. Give advantages of process layout.    [06]

**3)**    **Solve any two sub questions.**

a) What do you mean by therbligs? Represent any five therbligs and their symbols.    [06]

b) What are the various steps in making time study and calculating standard time?    [06]

c) What is an allowance? List and explain various allowances use to calculate standard time of a job.    [06]

**4)**    **Solve all sub questions.**

a) Draw and explain two handed process chart for assembly of nut and bolt.    [06]

b) The following is the summary of time study:    [06]
    i)   Total average observed time for completing the each job = 20 minute ( Man-machine operation 50:50 basis)
    ii)   Average operator performance = 90%
    iii)   Ralaxation allowance (Total) = 12% out of which contingency allowance is of 2% of the basic time.
    **Calculate:** (a) Basic for each job
           (b) Standard time for the above job

**5)**    **Solve all sub questions.**

a) Define anthropometry. Explain environmental factors in detail.    [06]

b) What is value analysis? How does it differ from value engineering? Which is better and why?    [06]

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