Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem (Even) Examination May-2019

ME2CO17 Industrial Engineering

Programme: Diploma Branch/Specialisation: ME

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

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

Q.1 i. Father of industrial engineering is **1**

(a) Jack Gilbert (b) Gantt

(c) Taylor (d) Newton

ii. Work study involves **1**

(a) Only method study

(b) Only work measurement

(c) Method study & work measurement

(d) Only motion study

iii. The following factors must be considered while selecting the work for method study **1**

(a) Economic considerations (b) Technical considerations

(c) Human reactions (d) All of these

iv. The following chart record the movements **1**

(a) Operation process chart (b) Flow process chart

(c) Both ‘a’ and ‘b’ (d) None of these

v. The objective of time study is to determine the time required to complete a job by **1**

(a) Fast worker (b) Average worker

(c) Slow worker (d) Any of these

vi. The time taken by a trained worker to perform an operation, while working a steady pace, is known as **1**

(a) Standard time (b) Normal time

(c) Representative time (d) None of these

P.T.O.

vii. In Halsey 50-50 Plan, output standards are established **1**
(a) By time study
(b) From previous production records
(c) From one's judgement
(d) All of these

viii. Which of the following is not wage incentive plan? **1**
(a) Rowan plan (b) Emerson plan
(c) Taylor plan (d) Halsey plan

ix. Material handling in Automobile industry is done by **1**
(a) Overhead crane (b) Trolley
(c) Belt conveyor (d) None of these

x. A low unit cost can be obtained by following **1**
(a) Product layout
(b) Functional layout
(c) Specialization of operation
(d) Process layout

Q.2 i. Define Industrial Engineering. **2**
ii. Define the work study. What are the components of work study? **3**
iii. What is Productivity and explain its relationship with the production? **5**
OR iv. Explain in detail the system approach used in Industrial Engineering. **5**

Q.3 i. Define method study. What are its objectives? **3**
ii. What is flow process chart? Discuss its utility for ethod Study Engineer. **7**
OR iii. State and explain in brief the steps involved in Method Study Procedure. **7**

Q.4 i. Explain the various steps involved in time study. **4**
ii. What is Performance Rating? Why it is required to rate the worker? Write the names of different rating method. **6**
OR iii. Explain with the help of block diagram showing the relationship between observed time, normal time and standard time. **6**

Q.5 i. What is merit rating? Why it is necessary? **4**
ii. Explain the various steps involved in job evaluation procedure. **6**
OR iii. State and describe the factors affecting wages. Also defined the terms Nominal wages and Real wages. **6**

Q.6 Attempt any two:
i. Define Plant Layout. What are the objectives of good plant layout? **5**
ii. Explain any five principle of material handling. **5**
iii. What are the various types of Plant Layout? Explain the application of each. **5**

******

Marking Scheme
ME2CO17 Industrial Engineering

Q.1	i.	Father of industrial engineering is (b) Gantt		**1**
	ii.	Work study involves (c) Method study & work measurement		**1**
	iii.	The following factors must be considered while selecting the work for method study (d) All of these		**1**
	iv.	The following chart record the movements (b) Flow process chart		**1**
	v.	The objective of time study is to determine the time required to complete a job by (b) Average worker		**1**
	vi.	The time taken by a trained worker to perform an operation, while working a steady pace, is known as (a) Standard time		**1**
	vii.	In Halsey 50-50 Plan, output standards are established (b) From previous production records		**1**
	viii.	Which of the following is not wage incentive plan? (d) Halsey plan		**1**
	ix.	Material handling in Automobile industry is done by (a) Overhead crane		**1**
	x.	A low unit cost can be obtained by following (a) Product layout		**1**
Q.2	i.	Definition of Industrial Engineering.		**2**
	ii.	Definition of the work study Components of work study	1 mark 2 marks	**3**
	iii.	Definition of Productivity Relationship with the production	2 marks 3 marks	**5**
OR	iv.	System approach in Industrial Engineering Block diagram	3 marks 2 marks	**5**
Q.3	i.	Definition of Method study Any four objectives 0.5 mark for each	1 mark	**3**
		(0.5 mark * 4)	2 marks	
	ii.	Definition of flow process chart Diagram of flow process chart Utility for Method Study Engineer.	2 marks 2 marks 3 marks	**7**
OR	iii.	Seven steps involved in Method Study Procedure. 1 mark for each	 (1 mark * 7)	**7**
Q.4	i.	Steps involved in time study.		**4**
	ii.	Definition of Performance Rating Requirement to rate the worker Names of different rating method	2 marks 2 marks 2 marks	**6**
OR	iii.	Block diagram Relationship between observed time, normal time and standard time.	3 marks 3 marks	**6**
Q.5	i.	Definition of merit rating Necessity	2 marks 2 marks	**4**
	ii.	Any six steps involved in job evaluation procedure. 1 mark for each	 (1 mark * 6)	**6**
OR	iii.	Description of factors affecting wages Definition of Nominal wages Definition of Real wages.	3 marks 1.5 marks 1.5 marks	**6**
Q.6		Attempt any two:		
	i.	Definition of Plant Layout Any five Objectives of good plant layout 0.5 mark for each (0.5 mark * 5)	2.5 marks 2.5 marks	**5**
	ii.	Any five principle of material handling. 1 mark for each	 (1 mark * 5)	**5**
	iii.	Various types of Plant Layout Application of each.	2.5 marks 2.5 marks	**5**

******