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**4th Sem / Branch : Mechanical Engg**  
**Subject:- Industrial Engineering**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory  
(10x1=10)

- Q.1 Basic tool in work study is (CO3)  
a) Graph paper                      b) Process chart  
c) Planning chart                      d) Stop watch
- Q.2 CPM is the (CO7)  
a) Time oriented technique  
b) Event oriented technique  
c) Activity oriented technique  
d) Target oriented technique
- Q.3 Which of the following incentive plans ensures a part of the swing to the worker and rest to the employer? (CO4)  
a) Emerson efficiency plan  
b) Taylor plan  
c) Hasley premium plan  
d) Gilbert plan
- Q.4 Process layout is employed (CO8)  
a) Where low volume of production is required  
b) Where similar jobs are manufactured on similar machines

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- c) Where machines are arranged on functional basis  
d) All of the above
- Q.5 Routing assists engineers in deciding in advance (CO5)  
a) The flow of material in the plant  
b) The methods of proper utilization of manpower  
c) The methods of proper utilization of machines  
d) The layout of factory facilities
- Q.6 Performance rating is equal to (CO2)  
a) Observed performance + normal performance  
b) Observed performance - normal performance  
c) Observed performance  $\times$  normal performance  
d) None of the above
- Q.7 A dummy activity in a net work diagram (CO2)  
a) Is represented by a dotted line  
b) Is an artificial activity  
c) Does not consume time or resources  
d) All of the above
- Q.8 Gantt charts are used for (CO7)  
a) Forecasting sales  
b) Production schedule  
c) Scheduling and routing  
d) All of the above
- Q.9 Which of the following layouts is suited for mass production? (CO8)  
a) Process layout  
b) Product layout  
c) Fixed position layout  
d) Linear programming  
e) Plant layout

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- Q.10 The basic difference between PERT and CPM is that  
(CO7)
- PERT deals with events and CPM with activities
  - Critical path is determined in PERT only
  - Costs are considered on CPM only and not in PERT
  - Guessed times are used in PERT and evaluated times in CPM

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  
(10x1=10)

- Q.11 Define Productivity? (CO1)
- Q.12 Define method study (CO2)
- Q.13 Draw the symbol of Permanent Storage (CO2)
- Q.14 What is string diagram? (CO2)
- Q.15 Define the actual working area. (CO8)
- Q.16 ..... is a relaxation allowance provided to the worker to overcome fatigue caused during working. (CO2)
- Q.17 The remuneration paid under contract by an employer to an employee for the work performed by him is called..... (CO4)
- Q.18 CPM is .....Oriented. (CO7)
- Q.19 PPC stands for..... (CO5)
- Q.20 Raw material or unworked material lying in an industry is called..... (CO9)

### SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Write the external factors which affect productivity? (CO1)

- Q.22 Explain the role of work study in improving productivity. (CO3)

- Q.23 What is an outline process chart? Explain with example. (CO2)

- Q.24 Define ergonomics. What are its objectives? (CO8)

- Q.25 Name the different techniques of work measurement (CO2)

- Q.26 Explain Rowan plan (CO4)

- Q.27 Explain allowance and its types. (CO2)

- Q.28 Define wage. What are its different types? Explain. (CO4)

- Q.29 Explain dispatching and its procedure. (CO5)

- Q.30 Explain different types of production.? (CO8)

- Q.31 What is a store? What are its different types? Explain (CO9)

- Q.32 Explain the relationship between method study and work measurement. (CO2)

- Q.33 Explain the method of improving the productivity. (CO1)

- Q.34 Explain the principle of motion economy. (CO8)

- Q.35 Explain E.O.Q Derive the expression for E.O.Q (CO9)

### SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the components/function of production and control. (CO5)

- Q.37 Explain the design of work place layout. (CO8)

- Q.38 Explain the procedure of developing standard data. (CO2)