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Roll No. ....

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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

- 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 × 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

(1)

181745/171745

(2)

181745/171745

- 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)