

11. In time study, what is the primary method used to collect data? 1 K1 CO3
 (a) Surveys (b) Observations (c) Interviews (d) Historical data
12. Which principle of motion economy involves using the least amount of motion necessary to perform a task? 1 K1 CO3
 (a) Reduce the distance of travel (b) Minimize unnecessary movements
 (c) Use smooth and continuous motions (d) Optimize tool and material placement
13. Which term is having a closest meaning as Sampling Distributions? 1 K1 CO4
 (a) Control charts (b) On-site inspection
 (c) Whole lot inspection (d) Acceptance sampling
14. If for a process, 18 out of 20 points are plotted above the CL but below the upper control limit, and only 2 of 20 are plotted between the center line and the lower control limit, what can we say about the process state? 1 K1 CO4
 (a) In control (b) Out of control
 (c) Data is not enough to predict (d) Process state is not dependent over this data
15. When is the 100% inspection done? 1 K1 CO4
 (a) The supplier's process is so good that defective units are never encountered
 (b) The supplier's process is so bad that almost every unit is defective
 (c) The component is extremely critical
 (d) The component is moderately critical
16. Double sampling plan is 1 K1 CO4
 (a) Only 2 units are checked
 (b) Only the first and last lot is checked 100%
 (c) Only two samples of n units are checked (necessarily)
 (d) Only two samples of n units are checked (conditionally)
17. Which of the following is a qualitative forecasting technique? 1 K1 CO5
 (a) Moving averages (b) Exponential smoothing
 (c) Delphi method (d) Regression analysis
18. Economic Batch Quantity (EBQ) is primarily used to: 1 K1 CO5
 (a) Maximize production costs (b) Minimize total inventory costs
 (c) Increase lead time (d) Reduce labor costs
19. What is the purpose of a Gantt chart in production scheduling? 1 K1 CO5
 (a) To display the sequence of operations (b) To evaluate employee performance
 (c) To forecast future sales (d) To assess quality control measures
20. Which of the following is a common challenge in production scheduling? 1 K1 CO5
 (a) Accurate forecasting of demand (b) Overproduction of goods
 (c) Lack of raw materials (d) Employee satisfaction

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

21. What is industrial engineering and state its objectives? 2 K1 CO1
22. Define productivity and list out the factor affecting in productivity. 2 K1 CO1
23. Compare product layout and process layout. 2 K2 CO2
24. What is Integer Linear Programming (ILP) in the context of line balancing? 2 K1 CO2
25. What is the purpose of stop watch time study techniques? 2 K1 CO3
26. List the advantages of using work sampling over traditional time study methods. 2 K1 CO3
27. What is statistical quality control, and how does it contribute to maintaining product quality in manufacturing? 2 K1 CO4
28. Differentiate control charts and acceptance sampling in the context of SQC. 2 K2 CO4
29. List out the objectives of process planning. 2 K1 CO5
30. What is meant by 'EOQ'? 2 K1 CO5

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31. a) Explain the various roles and responsibilities of an Industrial Engineer. 10 K2 CO1
- OR**
- b) Discuss the significance of Industrial Engineering in improving organizational efficiency and productivity. 10 K2 CO1
32. a) Explain the primary objectives of plant layout and how they impact productivity and efficiency. 10 K2 CO2
- OR**
- b) Outline the steps in the plant layout procedure and explain the significance of each step. 10 K2 CO2
33. a) Explain the Method Study procedure and its significance in work design. 10 K2 CO3
- OR**
- b) Interpret the role of ergonomics in designing workstations to reduce physical strain and improve productivity. 10 K2 CO3
34. a) Explain the use of control charts for variables, including the types of data they monitor and their application. 10 K2 CO4
- OR**
- b) Describe the steps involved in creating an X-bar and R-chart for variables in a manufacturing process. 10 K2 CO4
35. a) Discuss the role of forecasting in production planning. What methods are used for demand forecasting and how do they impact production schedules? 10 K2 CO5
- OR**
- b) Define Economic Batch Quantity (EBQ) and explain how it benefits production planning. 10 K2 CO5
36. a) Discuss how acceptance sampling techniques are applied to ensure product quality, and describe the different types of sampling plans. 10 K2 CO4
- OR**
- b) Explain the importance of scheduling in production planning and list common scheduling methods. 10 K2 CO5