

Initial layout

	4	6	8
6	A	B	C

From \ To	A	B	C
A	-	1	8
B	2	-	1
C	6	2	-

28. a. Discuss in detail about the classification of intermittent production system with examples. 10 3 3 1

(OR)

b. Explain in detail on design of work system. 10 3 3 1

29. a. Explain the following: 10 3 4 1

- (i) Break-even analysis  
(ii) Product development and design

(OR)

b. Explain value engineering and its importance. 10 3 4 1

30. a. Explain the following: 10 3 5 1

- (i) Incentives for indirect workers  
(ii) Profit sharing

(OR)

b. Explain the methods used for job evaluation. 10 3 5 1

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Reg. No.

B.Tech. DEGREE EXAMINATION, MAY 2022

Sixth Semester

18MEO111T – INDUSTRIAL ENGINEERING

(For the candidates admitted from the academic year 2018-2019 to 2019-2020)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40<sup>th</sup> minute.  
(ii) **Part - B** should be answered in answer booklet.

Time: 2½ Hours

Max. Marks: 75

**PART – A (25 × 1 = 25 Marks)**

Answer **ALL** Questions

- |  | Marks | BL | CO | PO |
|--|-------|----|----|----|
| 1. The correct order of procedure in method study is _____<br>(A) Select-record-examine-develop-define-install maintain (B) Select-define-examine-develop-record-install-maintain<br>(C) Select-record-develop-examine-define-install-maintain (D) Select-record-examine-define-develop-install-maintain | 1     | 2  | 1  | 1  |
| 2. A diagram showing the path followed by men and materials while performing a task is known as _____<br>(A) String diagram (B) Flow process chart<br>(C) Travel chart (D) Flow diagram  | 1     | 2  | 1  | 1  |
| 3. There are various methods to reduce cost of production except _____<br>(A) Increase in production output (B) Reduction in number of rejections<br>(C) Maintaining maximum inventory levels (D) Producing standardized products  | 1     | 2  | 1  | 1  |
| 4. Basic tool in work study is _____<br>(A) Graph paper (B) Process chart<br>(C) Planning chart (D) Stop watch   | 1     | 1  | 1  | 1  |
| 5. In micro-motion study, therblig is decreased by _____<br>(A) A symbol (B) An event<br>(C) An activity (D) Standard symbol and colour  | 1     | 1  | 1  | 1  |
| 6. Material handling in automobile industry is done by _____<br>(A) Overhead crane (B) Trolley<br>(C) Belt conveyor (D) Human  | 1     | 1  | 2  | 1  |
| 7. Process layout is employed for _____<br>(A) Batch production (B) Job production<br>(C) Mass production (D) Scale production   | 1     | 1  | 2  | 1  |

8. In a cost-value matrix, the high value and high cost is related to \_\_\_\_\_  
 (A) Process layout (B) Group layout  
 (C) Product layout (D) Machine layout
9. Which one of the following is not a factor considered plant location and site?  
 (A) Raw material availability (B) Transport facilities  
 (C) Climate (D) Machining operations
10. Standard time is defined as  
 (A) Normal time + allowance (B) Normal time + idle time  
 (C) Normal time + idle time + allowance (D) Normal time
11. Productivity =  
 (A)  $1 + \left[ \frac{\text{Profit}}{\text{Cost}} \right]$  (B)  $1 + \left[ \frac{\text{cost}}{\text{Profit}} \right]$   
 (C)  $1 - \left[ \frac{\text{Profit}}{\text{Cost}} \right]$  (D)  $1 - \left[ \frac{\text{cost}}{\text{Profit}} \right]$
12. Which of the following is most focused on the characteristics of the worker?  
 (A) Ergonomics (B) Human relations approach  
 (C) Scientific management (D) Industrial psychology
13. Which provides a systematic approach to decision making in competitive environments?  
 (A) Dynamic programming (B) Game theory  
 (C) Waiting line (D) Simulation
14. Productivity index  
 (A) Output/human input (B) Turnover/capital input  
 (C) Output/actual machine hours used (D) Effectiveness / efficiency
15. Ergonomics is not related to  
 (A) Human comfort (B) Human security  
 (C) Human safety (D) Work place environment
16. Which is not the objective of PPC?  
 (A) Controlling (B) Directing  
 (C) Coordination (D) Communication
17. \_\_\_\_\_ is the process of reducing the variety of products manufactured.  
 (A) Standardization (B) Simplification  
 (C) Specialization (D) Diversification
18. Total productive maintenance aims at  
 (A) Less idle time (B) Increase in productivity  
 (C) Zero down time (D) Increase in quality

19. Break-even point is the point where  
 (A) Fixed and variable cost lines intersect (B) Variable and total cost lines intersect  
 (C) Total cost and fixed lines intersect (D) Total cost and sales revenue lines intersect
20. PPL does not involve  
 (A) Product development (B) Work station design  
 (C) Sales forecasting in estimating (D) Marketing
21. Non-financial incentives do not include  
 (A) Job satisfaction (B) Job security  
 (C) Promotion (D) Bonus
22. Benefits of group incentive plan  
 (A) Uncertainty of profits (B) Low overhead cost  
 (C) Wastages of time (D) Opposition by trade unions
23. Job evaluation is the method of determining the  
 (A) Relative worth of jobs (B) Skills required by a worker  
 (C) Contribution of a worker (D) Contribution of a job
24. \_\_\_\_\_ incentives involve direct monetary payment.  
 (A) Direct (B) Indirect  
 (C) Financial (D) Non-financial
25. Wages represents \_\_\_\_\_ rates of day.  
 (A) Daily (B) Hourly  
 (C) Weekly (D) Monthly

**PART – B (5 × 10 = 50 Marks)**  
 Answer ALL Questions

- |  | Marks | BL | CO | PO |
|--|-------|----|----|----|
| 26. a. Discuss the various techniques used in work study to improve the productivity in industry.  | 10    | 3  | 1  | 1  |
| <b>(OR)</b>  |       |    |    |    |
| b. Discuss in detail the role of simo chart in work study.   | 10    | 3  | 1  | 1  |
| 27. a. Write in detail the fixed position layout with neat sketch. Also list the advantages, disadvantages and its suitability.              | 10    | 3  | 2  | 1  |
| <b>(OR)</b>  |       |    |    |    |
| b. Consider the following initial layout with unit cost matrix. Use the craft pairwise interchange technique to obtain the desirable layout. | 10    | 4  | 2  | 1  |