

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
Eighth Semester B.Tech Degree Supplementary Examination, August 2021



Course Code: ME476

Course Name: Material Handling &amp; Facilities Planning

Max. Marks: 100

Duration: 3 Hours

**PART A***Answer any three full questions, each carries 10 marks.*

Marks

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|---|---|-----|
| 1 | a) List any three advantages of an effective layout.  | (3) |
|   | b) Discuss any five factors to considered for a good factory layout design.                             | (5) |
|   | c) Define balancing losses.   | (2) |
| 2 | a) With a block diagram, discuss the elements of a systematic layout planning.                          | (5) |
|   | b) Explain the significance of lighting and ventilation in an industry.                                 | (5) |
| 3 | a) List any three criteria for the selection of a computerised layout program.                          | (3) |
|   | b) Using a neat flowchart, explain the steps in CRAFT technique for layout design.                      | (5) |
|   | c) Write a note on construction routine PLANET.   | (2) |
| 4 | a) Discuss the significance of temperature, humidity and air flow control in an industrial environment. | (6) |
|   | b) Discuss any four techniques for dust control in industry.  | (4) |

**PART B***Answer any three full questions, each carries 10 marks.*

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|---|---|-----|
| 5 | a) Define plant safety.   | (2) |
|   | b) List any three elements of industrial safety and explain.                      | (3) |
|   | c) Discuss any five plant safety programmes.                                      | (5) |
| 6 | a) Define an industrial accident. Write a note on economic aspects of accidents.  | (4) |
|   | b) Explain water pollution and what are its major causes.                         | (4) |
|   | c) List any two methods for safe material handling.                               | (2) |
| 7 | a) State any two principles of material handling.                                 | (2) |
|   | b) Discuss any three parameters of material handling systems.                     | (3) |
|   | c) Explain any five major factors influencing material handling system selection. | (5) |
| 8 | a) Draw neat sketches, and explain any three transporting equipment.              | (6) |
|   | b) Explain the major functions of material handling.                              | (4) |

**PART C**

*Answer any four full questions, each carries 10 marks.*

- 9 a) With a block diagram, explain the importance of a material (load) oriented system. (4)
- b) List any two factors to be considered for selection of material handling equipment. (2)
- c) Write a note on environmental characteristics for selection of material handling equipment. (4)
- 10 a) Explain any three criteria for classification of material handling equipment. (3)
- b) With neat sketch, explain: i) positioning equipment, ii) unit load equipment. (4)
- c) Differentiate between conveying system and elevating system. (3)
- 11 a) List any two transferring equipment in industry. (2)
- b) Define 'unit load concept' of material handling. (2)
- c) Draw neat sketches of i) flat pallet, ii) box pallet and iii) post pallet. (6)
- 12 a) List any three methods to minimize cost of material handling. (3)
- b) Distinguish between planned maintenance and unplanned maintenance. (4)
- c) Draw a flowchart to represent steps in predictive maintenance. (3)
- 13 a) Write a note on maintenance of hoists and cranes. (3)
- b) What are the major elements of material handling cost? (4)
- c) Write a short note on maintenance of conveyors. (3)
- 14 a) What are the ergonomic considerations in material handling? (8)
- b) Write a note on conveyor safety. (2)

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