Printed Pages: 02 **Sub Code: NME062**

Paper Id: | 1 | 4 | 0 | 8 | 1 | 5 | **Roll No.** | | | | | | | | | | |

B. Tech
(SEM VIII) THEORY EXAMINATION 2017-18
PLANT LAYOUT AND MATERIAL HANDLING

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

a) Explain location models.
b) What is a warehouse?
c) What is effectiveness?
d) What are the two types of layouts?
e) What is a plot plan?
f) Enlist some of the material control systems?
g) What is CIM?
h) Define TQM and JIT.
i) What the various systems used for material handling?
j) What are the factors for selection of plant layout?

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a) Explain the major considerations for location of textile industry in Mumbai and automobile industry in Faridabad.
b) How does standardization in electronic data interchange technology affect facilities planning?
c) What are 10 measurements of performance used in evaluating layout alternatives?
d) What is the role of manufacturing engineers in CIM?
e) Briefly explain the principles of material handling in a plant. Discuss various material handling systems and equipments.

SECTION C

3. Attempt any *one* part of the following: **10 x 1 = 10**

a) List the information needed during the data collection phase of plant layout.
b) Discuss the concept of intelligent building. What are the factors considered while designing intelligent buildings?

4. Attempt any *one* part of the following: **10 x 1 = 10**

a) Briefly describe the facilities design procedure and strategies. Also describe material flow analysis in relation with production activity.
b) What are the advantages (or disadvantages) of computer-aided facilities planning?

5. Attempt any *one* part of the following: **10 x 1 = 10**

a) What role does virtual reality play in facilities planning?
b) How can a material handling system increase plant space use? How can it reduce work-in-process (WIP) inventory?

6. Attempt any *one* part of the following: 10 x 1 = 10

a) Explain the term- Layout model, waiting line, simulation model.

b) When using simulation, why are problem and system definitions important?

7. Attempt any *one* part of the following: 10 x 1 = 10

a) Describe the plant service needed for an oil refinery plant. Explain the significance of effluent treatment of such plants.

b) Describe the classification of material handling equipment and explain the characteristics of overhead crane and roller conveyors with example.