Solution of Assignment 7

1. Which of the following is an example of guided path transporters in material handling system?
   (a) Manual driven vehicles
   (b) Fork lift trucks
   (c) Pallet jacks
   (d) **A crane in an automated storage and retrieval system**

2. Simulation is defined as
   (a) **Imitation of the operations of a facility or process, usually via computer**
   (b) Making model of a problem with some assumptions
   (c) Getting analytical solution of a problem
   (d) All of these

3. Process of determining whether a simulation model is an accurate representation of the system for the particular objectives of the study is
   (a) **Validation**
   (b) Verification
   (c) Credibility
   (d) Model assumptions

4. Simulation is used
   (a) To evaluate suggested improvements to existing systems
   (b) For evaluating the impact of capital investments
   (c) In having a test drive before making capital investments
   (d) **All of the above**

5. Verification, model conceptualization, analyse output data and validation are few of the different steps in simulation study. Among these four steps, the step which comes last will be
   (a) Model conceptualization
   (b) **Analyze output data**
   (c) Validation
   (d) Verification

6. Which of the following is not an example of unconstrained transporters in material handling system?
   (a) Carts
   (b) Fork lift trucks
   (c) Pallet jacks
   (d) **Chemical trails on the floor**

7. If the manager and other key project personnel accept a simulation model as correct, it means the model is checked for
   (a) Validation
   (b) Verification
   (c) **Credibility**
   (d) Objectives

8. Conditions causing system to reach its capacity is called as
   (a) **System capacity**
   (b) Peak periods
   (c) Response time
   (d) None of these

9. The proper scope and level of details should be determined by

(a) **The objectives of the study and the question being asked**
(b) System capacity
(c) Response time
(d) Peak periods

10. Effectiveness of a system is defined as
(a) $(\mu_B + \mu_D)/ \mu_D$
(b) **$\mu_B / (\mu_B + \mu_D)$**
(c) $\mu_D / (\mu_B + \mu_D)$
(d) $(\mu_B + \mu_D)/ \mu_B$

Where μ_B = Mean value of busy time
μ_D = Mean value of down time

11. Technique for increasing model validity and credibility depends on the

(i) Collect high quality information and data on the system
(ii) Interaction with key personnel (managers) on the regular basis
(iii) maintain assumptions documents and do structured walk through

(a) Only i
(b) Both ii and iii
(c) Both i and ii
(d) All of the above

12. Which of the following statement is/ are correct for 'verification' of model?

(i) Concerned with determining whether the conceptual model has been correctly translated into a computer program i.e. debugging the computer program
(ii) To determine whether a simulation model (against computer program) is an accurate Representation of the system, for a particular objective

(a) Only i
(b) Only ii
(c) Both i and ii
(d) None of these

13. Which of the following statement is/ are correct for Non- Accumulating type of conveyors?

(i) In such conveyor section, spacing relative to other items does not change
(ii) If one item stops moving, the entire section stops moving
(iii) Tilt- tray conveyors, some belt conveyors, and conveyors designed to carry heavy loads (usually pallets) are non- accumulating conveyors

(a) Both i and iii
(b) Both ii and iii
(c) Only iii
(d) All of the above

14. Which of the following statement is/ are correct for Accumulating type of conveyors?

(i) Conveyor section runs continuously

(ii) Items that can be damaged by bumping into each other, can not be placed on such conveyor

(a) Only i
(b) Only ii

(c) Both i and ii
(d) None of these

Q15. Match the following type of transporters with their property given in the table below.

Transporters	Property
(A) Unconstrained	(i) Maintain a fixed distance between the trailing edge of the Load ahead and the leading edge of the load behind
(B) Guided path	(ii) Fixed path transporters
(C) Indexing conveyor	(iii) Free path transporters

(a) A-iii, B-i, C-ii
(b) A-ii, B-i, C-iii
(c) A-ii, B-iii, C-i
(d) **A-iii, B-ii, C-i**