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**Question Paper Code: 49212**

M.E. DEGREE EXAMINATION, MAY 2015.

Elective

CAD/CAM

14PCD519 – LEAN MANUFACTURING

(Regulation 2014)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (5 x 1 = 5 Marks)

- Lean production involves
  - Elimination of cost only
  - Improvement of quality only
  - Improvement of speed only
  - Elimination of all types of waste only
- Kaizen is a term taken from which language
  - Hindi
  - Japanese
  - Spanish
  - English
- Which one of these is not generally associated with JIT?
  - Low inventories
  - Preventive maintenance
  - A push system
  - Problem solving
- Which term best relates to fail-safing a process?
  - Automation
  - Poka-Yoke
  - Jidoka
  - Kanban
- What is WERS?
  - Work employment relations survey
  - Worker employer relations survey
  - Work place employment relation survey
  - Work employment regular statistics

PART - B (5 x 3 = 15 Marks)

6. Define lean production.
7. What are the 5s principles?
8. What is value stream mapping?
9. Write the importance of automation.
10. What are the elements of systematic planning?

PART - C (5 x 16 = 80 Marks)

11. (a) (i) Brief the seven major forms of waste and its elimination. (6)  
(ii) Explain the significance of cycle time reduction in Toyota production system. (10)  
Or
- (b) (i) Write five steps of lean implementation. (6)  
(ii) Explain the basic tools for lean manufacturing. (10)
12. (a) (i) Write the benefits of lean 5S system. (6)  
(ii) Explain seven step plans to establish the TPM in an organization in detail and also state the benefits to organization by implementing the TPM. (10)  
Or
- (b) (i) Write short notes on Kaizen layouts. (6)  
(ii) Briefly explain the various elements of standardized work. (10)
13. (a) (i) What are the ways to achieve pull production system. (6)  
(ii) Explain the features and benefits of Kanban system. (10)  
Or
- (b) (i) Compare JIT with reorder point system. (6)  
(ii) What is JIT and where it is implemented explain with suitable example. (10)
14. (a) (i) Write short notes on automation development in lean environment. (6)  
(ii) What is Poka Yoke? Write the purpose and types of Poka Yoke, explain the concept with suitable examples. (10)

Or

- (b) (i) Differentiate lean manufacturing from sig sigma. (6)  
(ii) What is JIDOKA automation and explain 5 steps to build JIDOKA equipment. (10)

15. (a) (i) Discuss lean culture. (6)  
(ii) How the employee participation does helps to improve the lean production systems. (10)

Or

- (b) (i) What is quality circle and explain its activities. (6)  
(ii) Explain different phases of Hoshin planning system with suitable examples. (10)

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