

**B.E DEGREE EXAMINATIONS: APRIL/MAY 2014**

(Regulation 2009)

Seventh Semester

**MECHANICAL ENGINEERING**

MEC121: Production Planning and Control

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Fatigue is concerned with
  - a) material movement
  - b) human effort
  - c) job satisfaction
  - d) unemployment
2. Higher set up time is the characteristic of
  - a) lean production
  - b) continuous production
  - c) job shop production
  - d) mass production
3. If the need is greater than break volume, it is optimal to
  - a) buy
  - b) sell
  - c) make
  - d) sub contract
4. A process where a firm concentrates on limited number of product types is called as
  - a) variety reduction
  - b) simplification
  - c) standardization
  - d) specialization
5. Value is numerically equal to
  - a) cost/ function
  - b) worth/cost
  - c) function/cost
  - d) cost/worth
6. The ability of a product to perform more than 1 function is called as
  - a) functional versatility
  - b) cloning
  - c) duality
  - d) functionability
7. PCO stands for
  - a) public call outlet
  - b) preparatory cost order
  - c) protocol order
  - d) preferred customer order
8. A process where a firm concentrates on limited number of product types is called as
  - a) variety reduction
  - b) simplification
  - c) standardization
  - d) specialization
9. Packaging and scaling of the products are related to the aspect of

- a) dependability
  - b) durability
  - c) aesthetic
  - d) functional
10. Gantt charts were devised by
    - a) Gilbreth
    - b) FW. Taylor
    - c) Hawthorne
    - d) Henry Gantt

**PART B (10 x 2 = 20 Marks)**

11. What are the objectives of product analysis?
12. What is meant by standardization?
13. List the objectives of method study
14. What is meant by work measurement?
15. What are the different steps or specific activities involved in process planning?
16. What are steps involved in the value analysis?
17. Define dispatching
18. Define expediting
19. Name a few ERP modules
20. What is MRP II?

**PART C (5 x 14 = 70 Marks)**

21. a) The fixed costs for the year 2009-2010 are Rs. 70000. Variable cost per unit is Rs. 50. Each unit sells at Rs. 170. Determine
  - (i) Break even quantity.
  - (ii) Profit/Loss with an expected sales volume of 6500 units.
  - (iii) No of units to be sold if the profit target is Rs. 130000.
  - (iv) Margin of safety if the company sells 7500 units.

**(OR)**

  - b) Explain the functional and operational aspects of product design
22. a) What are the different types of production practiced in industries? Explain the various types in detail

**(OR)**

  - b) State and explain in detail the steps involved in conducting the method study.
23. a) What is meant by minimum cost batch size? Derive an expression for the same.

**(OR)**

  - b) Explain the importance of process planning with reference to production control and also discuss the activities in process planning

24. a) (i) What are the assumptions made in sequencing models? (4)  
(ii) Explain the procedure by which scheduling 2 jobs in m machines can be done (10)  
with suitable example

**(OR)**

- b) Discuss in detail the concept, inputs, outputs, working and benefits of material requirement planning.
25. a) What is EOQ? Derive the expression for EOQ when the demand of the item is uniform, the production rate is infinite and no stock-outs are allowed.  
**(OR)**
- b) What is ABC analysis? Explain its significance in the inventory control with suitable example.

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