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**Question Paper Code: 52P03**

M.E. DEGREE EXAMINATION, DEC 2020

Second Semester

Power Electronics and Drives

15PCD203 – INTEGRATED PRODUCT DESIGN AND PROCESS DEVELOPMENT

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

**(Answer any six of the following questions)**

1. Designs are periodically modified to CO1- R
  - (a) improve product performance
  - (b) strive for zero-based rejection and waste
  - (c) make products easier and faster to manufacture
  - (d) all of the mentioned
  
2. The expected qualities of a product are CO1- R
  - (a) it satisfies the needs and expectations of the customer
  - (b) it has a pleasing appearance and handles well
  - (c) it has high reliability and functions safely over its intended life
  - (d) All of the above
  
3. The life cycle of a product includes CO2- R
  - (a) extraction of natural resources
  - (b) processing of raw materials
  - (c) manufacturing of products
  - (d) All of the above
  
4. The following is the preliminary stage of Production planning CO2- R
  - (a) Capacity planning
  - (b) Material requirements planning
  - (c) Scheduling
  - (d) Product development and design

5. \_\_\_\_\_ helps in establishing the interchangeability of product CO3- R
- (a) Standardization (b) Simplification  
(c) Diversification (d) Specialization
6. Product \_\_\_\_\_ is the ultimate objective of variety reduction CO3- R
- (a) Simplification (b) Standardization  
(c) Specialization (d) all of the mentioned
7. Work sampling is applied for CO4- R
- (a) Estimation of the percentage utilization of machine tools  
(b) Estimating the percentage of the time consumed by various job activities  
(c) Finding out time standards, specially where the job is not repetitive and where  
time study by stop watch method is not possible  
(d) all of the mentioned
8. For a product layout the material handling equipment must CO4- R
- (a) Have full flexibility  
(b) Employ conveyor belts, trucks, tractors etc.  
(c) Be a general purpose type  
(d) Be designed as special purpose for a particular application
9. Which of the following layouts is suited for mass production? CO5- R
- (a) Process layout (b) Product layout  
(c) Fixed position layout (d) Plant layout
10. The process of creating mechanisms and shapes of mechanical CO5- R  
elements for a machine to get the desired output for a given input is  
called as \_\_\_\_
- (a) analysis (b) innovation  
(c) synthesis (d) designing

PART – B (3 x 8= 24 Marks)

**(Answer any three of the following questions)**

11. Briefly explain the product design and development process. CO1- U (8)
12. How the product changes implemented and standardization in CO2- U (8)  
concept selection.

13. How the design issues make an impact in related system in product architecture. CO3- U (8)
14. Explain detail about of customer needs. CO4- U (8)
15. Explain detail about prototype methods. CO5- U (8)