

Master of Production Engineering Examination, 2017

(1<sup>st</sup> Year 2<sup>nd</sup> Semester)

CONCURRENT ENGINEERING

Time: Three Hours

Full Marks:100

Answer any FIVE questions

1. a) What is Concurrent Engineering? What are the importance of Concurrent Engineering?  
b) Why is concurrent engineering known as Time Compression Engineering?  
c) Why is concurrent engineering known as Life Cycle Engineering?  
d) Distinguish between Traditional Engineering and Concurrent Engineering approach.  
(5+5+5+5)
  
2. a) What are the needs of concurrent engineering?  
b) What do you mean by concurrent engineering culture?  
c) What are the benefits of concurrent engineering?  
d) What are the factors related to the product as well as the company to be considered for implementation of concurrent engineering?  
(4+5+5+6)
  
3. a) What is product formation? How is it different from product development?  
b) Discuss about the characteristics features of various classes of models for product development.  
(6+14)
  
4. a) What is Quality Engineering? What is ideal quality? What do you mean by quality loss function?  
b) What is Robust Design? What are the steps of Taguchi Method of Robust Design?  
c) Discuss on Signal to Noise ratio analysis for determining the optimal combination of process parameters and predicted value of response.  
(6+6+8)
  
5. a) What is Rapid Prototyping? What are the advantages of Rapid Prototyping over conventional model making?  
b) Describe the working principle of Stereo Lithography Apparatus (SLA) with sketch highlighting the strength and weakness of it.  
(6+14)

6. a) Classify RP techniques based on input build materials.  
b) Describe the working principle of Solid Ground Curing (SGC) with sketch highlighting the strength and weakness of it.

(5+15)

7. a) What is Rapid Tooling? Explain about various types of it.  
b) What is Reverse Engineering? What are the objectives of it? Explain the processes of Reverse Engineering.

(8+12)

8. Write short note with sketch on any two of the followings:

(10+10)

- i) Selective Laser Sintering (SLS)
  - ii) Fused Deposition Modelling (FDM)
  - iii) Laminated Object Manufacturing (LOM)
  - iv) Laser Engineered Net Shaping (LENS)
  - v) Three Dimensional Printing (3DP)
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