

M.E. PRODUCTION ENGINEERING FIRST YEAR SECOND SEMESTER EXAMINATION, 2018

CONCURRENT ENGINEERING

Time: Three Hours

Full Marks:100

Answer any FIVE questions

1. a) What is Concurrent Engineering? What are the objectives of Concurrent Engineering?
b) Why is concurrent engineering known as Simultaneous 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 strategic plans of concurrent engineering?
b) What are the benefits of concurrent engineering?
c) What are the factors related to the product as well as the company to be considered for implementation of concurrent engineering?
(7+5+8)

3. a) How is the sample different from prototype and series product?
b) Discuss about the characteristics features of various classes of models for product development.
(4+16)

4. a) What is Quality Engineering? What are the different types of quality principles?
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) Classify RP techniques based on input build materials.
b) Describe the working principle of Fused Deposition Modelling (FDM) with sketch highlighting the strength and weakness of it.
(5+15)

[PTO]

6 a) What is Rapid Prototyping? What are the advantages of Rapid Prototyping over conventional model making?

b) Describe the working principle of Selective Laser Sintering (SLS) with sketch highlighting the strength and weakness of it.

(6+14)

7. Write short note with sketch on any two of the followings: (10+10)

i) Stereo Lithography Apparatus (SLA)

ii) Solid Ground Curing (SGC)

iii) Laminated Object Manufacturing (LOM)

iv) Three Dimensional Printing (3DP)

8. a) What is Reverse Engineering? Explain the processes of Reverse Engineering

b) What is Rapid Tooling? Distinguish between Direct Rapid Tooling and Indirect Rapid Tooling? What are the applications of Rapid Tooling in Investment Casting?

(10+10)
