CBCS SCHEME

USN | | | | | | | | | |

18MDE31

Third Semester M.Tech. Degree Examination, Jan./Feb. 2021
Design for Manufacture and Assembly

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Explain with a neat sketch the effect of material properties on design. **(10 Marks)**

b. Explain why geometric tolerance have to be specified? Explain in detail.
i) circulating ii) perpendularity iii) cylindricity iv) angularity. **(10 Marks)**

OR

2 a. Define the following terms : i) C_p ii) C_{pk} iii) sure fit law iv) truncated normal curve. **(10 Marks)**

b. What is design? With a neat sketch explain the major phases of design. **(10 Marks)**

Module-2

3 a. Sketch and explain selective assembly module – I. **(10 Marks)**

b. Explain the procedure for changing the datum. **(10 Marks)**

OR

4 a. With a neat sketch explain the following :
i) Interchangeability ii) Selective assembly. **(10 Marks)**

b. Define shims. Explain the types of shims. **(10 Marks)**

Module-3

5 a. With a neat sketch write a note on : i) pattern ii) mould. **(10 Marks)**

b. Write a note on the following terms :
i) Blind bored holes ii) Flat bottom drilled holes. **(10 Marks)**

OR

6 a. Write a note on drilling entry and runout. **(10 Marks)**

b. With a neat sketch explain cast holes, cored holes and machined holes. **(10 Marks)**

Module-4

7 a. Define forgine and list the forging rules. **(10 Marks)**

b. With a suitable example explain mating part with fixed fastener. **(10 Marks)**

OR

8 a. Sketch and explain the paper layout ganging. **(10 Marks)**

b. Sketch and explain the projected tolerance. **(10 Marks)**

Module-5

9 a. Explain design for assembly and write down its approaches. **(10 Marks)**

b. Explain Boothroyd – Dewhurst DFA method. **(10 Marks)**

OR

10 a. Explain computer aided DFA method. **(10 Marks)**

b. Explain the Taylor's principle of gauge design. **(10 Marks)**

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