M. Tech.-IV (Mechanical CAD/CAM) (CBCS – 2015 Course) :
SUMMER - 2019

SUBJECT : SELF-STUDY PAPER – II: i) DESIGN FOR MANUFACTURING & ASSEMBLY

Day : Thursday
Date : 13/06/2019

Time : 11.00 AM TO 02.00 PM
Max. Marks : 60

S-2019-3543

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw neat diagrams **WHEREVER** necessary.
4) Answer to both the sections should be written in **SAME** Answer book.

SECTION – I

Q.1 With an example explain process selection chart, state the advantages of this chart. **[10]**

OR

As a design engineer discuss the relationship between material selection and process selection for a given component.

Q.2 Explain the terminology used for surface roughness. **[10]**

OR

Determine the type of fit for 60mm shaft and hole pair designated H8/f7.
Diameter steps = (60 – 90)

$es = -5.5\ D^{0.41}$

IT8 = 25 i

IT7 = 16 i

Q.3 Differentiate between investment castings and die casting. **[10]**

OR

Explain the importance of solidification simulation in casting design.

SECTION – II

Q.4 Explain various materials used for forging dies with their advantages. **[10]**

OR

Explain the chief factors in the design of a weldment.

Q.5 What allowances and tolerances are desired for sheet metal part design? **[10]**

OR

Elaborate various design guidelines for various extrusion processes.

Q.6 Enumerate the design considerations for injection moulding. What are joining methods of plastics? **[10]**

OR

Explain design and development features for automatic assembly.

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