

Model Question Paper (CBCS)

15ME744

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Seventh Semester B.E. Degree (CBCS) Examination Dec 2018/ Jan 2019

Design for Manufacturing

Time: 3 hrs.

Max. Marks: 80

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

MODULE – I

- 1 a Explain the major phases of design with a block diagram. (08Marks)
b Explain the following (i) Process capability (ii) Skewness (iii) C_p (iv) C_{pk} (08Marks)

OR

- 2 a Explain the performance characteristics of materials. (08Marks)
b Explain the cost per unit property method used in the process of material selection (08 Marks) with an example.

MODULE – II

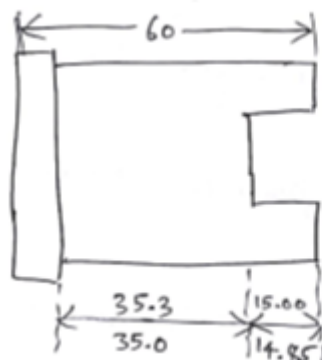
- 3 a Sketch and explain the selective assembly model-II, where, total tolerance is equal (08 Marks) to group tolerance of the shaft.
b Define true position tolerance. Differentiate between true position tolerance system (08 Marks) and coordinate tolerance system with an example.

OR

- 4 a With a neat sketch, explain the “zero true position tolerancing”. (08 Marks)
b Explain with an example the “floating fastener and fixed fastener” methods used in calculating true position tolerances. (08 Marks)

MODULE – III

- 5 a Change the datum for the drawing of a stud from bottom of groove to right hand end face (see Fig. Q5 (a)). (10 Marks)



All dimensions are in mm

Fig. Q5(a)

- b Explain the “reduction of machined areas” with examples. (06 Marks)

OR

- 6 a** Explain the following with examples: (10 Marks)
(i) Keyways and (ii) Doweling procedures
- b** Explain the procedure for changing the datum. (06 Marks)

MODULE – IV

- 7 a** With suitable examples, explain cast holes, cored holes and machined holes. (08 Marks)
- b** Explain the design recommendations for spot weldments with suitable sketches. (08 Marks)

OR

- 8 a** Explain the following with sketches: (i) Pattern (ii) Mould (08 Marks)
- b** Explain the design recommendations for cost reduction in welding with suitable sketches. (08 Marks)

MODULE – V

- 9 a** Explain the design recommendations for the following forging variables with suitable sketches: (09 Marks)
(i) Parting line (ii) Ribs, bosses, webs, recesses
- b** Explain the design recommendations for injection molding with suitable sketches. (07 Marks)

OR

- 10 a** Explain the design recommendations for the following powder metallurgy variables with suitable sketches: (09 Marks)
(i) Draft
(ii) Wall thickness
(iii) Radii
- b** Explain the design recommendations for the following forging variables: (07 Marks)
(i) Draft (ii) Radii (iii) Machining allowance