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Question Paper Code : 31047

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Seventh Semester

Mechanical Engineering

080120043 — DESIGN OF JIGS, FIXTURES, PRESS TOOLS AND MOULDS

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Use of approved design data book is permitted.

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term 'fixture'.
2. Sketch a headed drill bush.
3. List out the basic elements of jig.
4. What is meant by quick change fixture?
5. Define the term 'press working' and state its types.
6. Differentiate blanking and piercing.
7. State the advantages of V bending.
8. What is ironing effect in drawing?
9. What is mould venting?
10. What is mould shrinkage?

PART B — (5 × 16 = 80 marks)

11. (a) What are the various location devices? Explain these with the aid of suitable sketches. (16)

Or

- (b) Compare mechanical actuation and hydraulic actuation in a clamp used in jigs. (16)

12. (a) Sketch and explain the turnover and latch jigs. (16)

Or

- (b) Explain the inspection and welding fixtures with neat sketches. (16)

13. (a) Sketch and explain the various press working terminologies. (16)

Or

- (b) Design and sketch the views of a compound die that produces steel washers. Dimensions of the washer may be assumed suitably. (16)

14. (a) (i) Calculate the blank length to make the part shown in Fig 4. Also determine the bending force required if the ultimate tensile strength of material is 3500 kg/cm^2 . The die radius is 8mm and the bend length is 120cm . (12)

- (ii) Discuss the salient features of forming dies. (4)

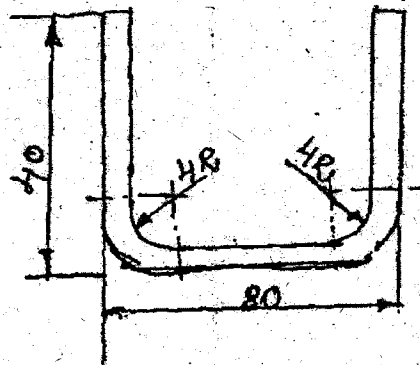


Fig. 4

Or

- (b) Discuss in detail the various factors affecting drawing. (16)

15. (a) Explain injection mould design. (16)

Or

- (b) (i) How are moulds classified? (8)

- (ii) Write a short note on split cavity moulds. (8)