

2. Attempt any two of the following: 10×2
- (a) What do you understand by theory of Deep Drawing? Describe.
- (b) What are the major design aspects at time of welding technology?
- (c) What factors are affecting Cutting temperature in cutting tool?

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Attempt any two of the following : 10×2

- (a) Calculate the melting efficiency in the case of arc welding of steel with a potential of 20V and current of 200A. The travel speed is 5mm/s and the cross sectional area of the joint is 20mm². Heat required to melt the steel may be taken as 10j/ mm³ and the heat transfer efficiency as 0.85.
- (b) Two steel plates each 1 mm thick are spot welded at a current of 5000A. The current flow time is 0.1 s. The Electrodes used is 5 mm in diameter. Determine the heat generated and its distribution in the weld zone. The effective resistance in the operation is 200 μΩ.

(2)

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- (c) What do you mean by "Cutting Oils" and its types in a Machine shop? Discuss with example. uptuonline.com

4. Attempt any two of the following : 10×2=20

- (a) A taper pin of length 80 mm has a taper length of 48mm. The larger diameter of taper is 83 mm and the smaller diameter is 73mm. Determine (i) taper in mm/meter and in degree. (ii) the angle to which the compound rest should be setup (iii) the tail stock setting over.
- (b) Define Recent Advances in Cutting tool and how it is better than Old Cutting tools.
- (c) Explain the Electron beam Welding process with the help of neat sketch. *uptuonline.com*

5. Attempt any four of the following : 5×4

- (a) Define the Extrusion process.
- (b) Define the term "Weld ability".
- (c) What are the principal elements of metal machining?

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(3)

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