TME-504 196 Printed Pages : 4

Paper Code & Roll No. to be filled in your Answer Book

Roll No. | | | | | | | | | | |

Odd Semester Examination-2016

B.Tech. (Semester-V)

MANUFACTURING SCIENCE-II

[Time : 3 Hours] [Maximum Marks :100]

Note : Attempt **all** questions. All question carry **equal** marks. Assume missing data suitably.

1. Attempt **any four** parts: [5 × 4 = 20]

   (a) With the help of neat sketches, explain the geometry of single point cutting tool.

   (b) Explain the mechanism of chip formation in metal cutting.

   (c) DrawMerchant's force circle diagramandderive Merchant's shear angle relationship.

(d) What do you meant by tool life? Explain the relationship between cutting speed & time for flank wear.

(e) Explain the concept of tool wear in detail.

(f) Explain what is built up edge. Explain conditions which promote the growth of built-up edge along with its consequences.

2. Attempt **any four** parts: [5×4=20]

(a) What are the main differences between Capstan lathe and Turret lathe?

(b) Explain the working principle of shaper with its advantages and limitations.

(c) What is a planer? Write down its main advantages, limitations and application.

(d) Explain the geometry of twist drill.

(e) What are the differences between reaming, boring and drilling?

(f) What is diving head? Explain its main parts.

3. Attempt **any two** parts: [10× 2 = 20]

(a) Describe the different classes of fit. Also explain lateral and bilateral system.

(b) What decides the hardness of the grinding wheel? Distinguish between dressing and truing of grinding wheel.

(c) With the help of net sketch explain the process of lapping and honing. What are the limitations of honing process? Why a low cutting speed is recommended for honing?

4. Attempt **any two** parts: [10× 2 = 20]

(a) State the important functions of flux coatings of electrodes used in manual arc welding process. Also give designation of coated electrode used in manual arc welding.

(b) Explain the working principle of TIG welding. Also explain the differences between TIG and MIG welding.

(c) Why is current used in resistance spot welding larger than for resistance seam welding? What are advantages of projection welding?

5. Attempt **any two** parts: [10×2=20]

(a) What do you understand by unconventional machining processes? What are their advantages over conventional machining processes?

(b) With the help of neat sketches, explain the working of electrical discharge machining process with its limitations and application.

(c) A chromium product has been machined by anodic dissolution process. Following data is given: current density: 246 amp/cm^2, Valency of chromium at which it is dissolute: 2, Atomic weight of chromium: 7.2 gm/cm^3. Determine the metal removal rate.

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