

END TERM EXAMINATION

FIRST SEMESTER [B.TECH] NOVEMBER-DECEMBER 2018

Paper Code: ETME 105

Subject: Manufacturing Processes

Time : 3 Hours

Maximum Marks : 75

Note: Attempt five questions in all including Q. No. 1 which is compulsory. Select one question from each unit. Assume suitable missing data, if any.

- Q1. Answer the questions: (10x2.5=25)
- Classify carbon steel on the basis of % carbon.
 - Write important properties of green sand used in foundry shop.
 - Differentiate between hot working and cold working processes.
 - With the help of neat sketch, describe any marking tool used in fitting shop.
 - With the help of sketch, describe all the three oxyacetylene flames.
 - Enumerate the limitations of spot welding.
 - Define blanking and punching processes in sheet metal work.
 - Describe single hem and double hem and write their purpose in sheet metal joint.
 - Define stiffness and toughness of the material.
 - Differentiate between cold and hot isostatic pressings.

Unit-I

- Q2. a) Write short notes on alloying metals for aluminium alloys. (6)
- b) Describe five types of pattern allowances considered in casting. (6.5)
- Q3. a) Briefly explain i) cyaniding ii) nitriding and iii) induction hardening. State their advantages and limitations. (6)
- b) Describe step by step the process of investment casting. (6.5)

Unit-II

- Q4. a) With the help of neat sketch, describe the machine forging. (6.5)
- b) With the help of neat sketches, explain the various types of files used in fitting shop. (6)
- Q5. a) Explain with sketches, the following operations in forging: i) Upsetting, ii) Drawing down iii) Setting down iv) Punching v) Bending. (6.5)
- b) Write a short note on the following operations: i) Chipping ii) Grinding iii) Sawing, iv) Scrapping and v) Tapping. (6)

Unit-III

- Q6. a) Discuss with the neat sketch, the principle of atomic hydrogen welding. (6)
- b) Discuss, with the help of neat sketch, the principle of electric arc welding. What is straight polarity and reversed polarity? (6.5)

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- Q7. a) Explain the term 'Weldability'. What are the advantages and disadvantages of welded joints over other joints? (6)
- b) Differentiate between a) TIG welding and b) MIG welding processes. (6.5)

Unit-IV

- Q8. a) Discuss the various methods available for manufacturing metal powders in powder metallurgy. (6)
- b) What are the various sheet metal operations? Discuss any four of them in brief with neat sketch. (6.5)
- Q9. a) Explain spinning and stretch forming operations and enumerate their characteristics and applications. (6)
- b) Describe briefly the various secondary operations performed on powdered metal parts. (6.5)

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