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K 4534

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Annual Pattern — First Year

Mechanical Engineering

ME 1 X 01 — MANUFACTURING TECHNOLOGY — I

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the different terms by which moulding flask is referred to in three piece moulding.
2. Give comparative characteristics on merits and demerits of aluminium and steel pattern materials.
3. Mention a few possible problems that can be encountered in brazing.
4. Present a neat sketch illustrating the Flux-cored arc welding process.
5. Mention any four rules that are to be adopted in forging die design.
6. Give a schematic representation of the rolling process.
7. What are the various properties that a sheet metal should possess?
8. Sketch the process of metal spinning.
9. Mention the four distinct phases of the rotational molding process.
10. Draw the Stress strain graph for thermoplastic material.

PART B — (5 × 16 = 80 marks)

11. (a) Explain with neat sketch the working of a cupola furnace.

Or

(b) Illustrate with neat sketches the operation sequence of hot chamber die casting process.

12. (a) Describe in detail the tungsten inert gas (TIG) welding process indicating its constructional features.

Or

(b) Explain in detail the common weld defects and furnish suitable solution to overcome these weld defects.

13. (a) Write short notes on :

- (i) Tube piercing process
- (ii) Extrusion defects.

Or

(b) Write in detail about the common forging processes.

14. (a) Explain the various Shearing operations that can be performed using a press tool.

Or

(b) Write short notes on :

- (i) Hydro forming
- (ii) Magnetic Pulse forming.

15. (a) Mention any 8 common injection moulding defects and furnish its descriptions and causes.

Or

(b) Explain the process of film blowing indicating its merits, demerits and applications.