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[5252]-112

S.E. (Automobile/Mechanical Engineering) (First Semester)

EXAMINATION, 2017

MANUFACTURING PROCESSES—I

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Neat figures must be drawn whenever necessary.

(ii) Solve Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4, Q. No. 5 or Q. No. 6. Q. No. 7 or Q. No. 8.

(iii) Neat diagrams must be drawn wherever necessary.

(iv) Assume suitable data if necessary.

1. (a) Explain with neat sketch Permanent molding method ? State applications of Permanent molding method. [4]
- (b) What is "Fettling" in casting ? Explain in detail. [4]
- (c) Explain Lost-Wax casting process in detail. [4]

Or

2. (a) Describe the pattern making allowances. What is the use of contraction rule ? [4]
- (b) Explain with suitable sketch the test performed to find grain fineness number. [4]
- (c) What is continuous casting ? Describe in detail with figure the continuous casting process. [4]

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Or

3. (a) Explain hot piercing and Hot spinning process in brief. [4]
(b) Write short note on shot pining. Explain the applications of shot pining. [4]
(c) Explain with neat sketch cluster rolling mills. [4]

Or

4. (a) Explain cold drawing process in brief. [4]
(b) Differentiate between hot working and cold working. [4]
(c) Explain electric arc welding with a neat diagram. [4]
5. (a) The washer of 30 mm outer diameter and 15 mm inner diameter are to be made by press work from MS sheet of 1 mm thickness. Determine : (i) Clearance (piercing die and punch sizes (blanking die and punch sizes. Assume suitable data if required. [6]
(b) Design press tonnage required for blanking a square plate having its side 40 mm² and have a central hole of diameter 15 mm, the sheet metal thickness is 2.5 mm and shear strength of material is 360 N/mm². Calculate die and punch dimensions. Consider the clearance of 10% of stock thickness. [7]

Or

6. (a) Explain compound die with neat sketch. [6]
(b) Why are strippers required ? List various types of strippers and explain any *one* with neat sketch. [7]

7. (a) Calculate the amount of offset of tail stock for turning taper on full length of a job 100 mm long to have its two diameters as 50 mm and 40 mm. [7]
- (b) Write a short note on taper turning by tailstock set over method with proper expression. [6]

Or

8. (a) With a block diagram of lathe machine, explain size and specification of Lathe machine. [7]
- (b) Differentiate between Capstan and Turret lathe with diagram. [6]