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APR-MAY

B. E. (Fifth Semester) Examination, 2020

(Old Scheme)

(Mechanical Engg.)

MANUFACTURING SCIENCE-II

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Part (a) of each question is compulsory. Attempt any* ***two*** *parts from (b), (c) and (d) of each question. Give self explanatory diagrams wherever necessary.*

1. (a) Define forging operation. 2

(b) What are the different types of forging defects? Discuss them briefly. 7

(c) Explain direct and indirect extrusion process with the help of their respective diagrams. 7

(d) Discuss various types of extrusion defects. Also give their diagrams. 7

2. (a) Differentiate between hot rolling and cold rolling. 2

(b) What are the types of rolling mills? Explain them in brief giving their respective diagrams. 7

(c) Discuss roll pass design for continuous mill with the help of diagram. 7

(d) Explain the principles of wire drawing and tube drawing process with the help of their respective and suitable diagrams. 7

3. (a) Write the names of at least four press-working operations. 2

(b) What are the different types of press working dies? Enlist their names and explain any one type of press-working die giving its diagram. 7

(c) Discuss the principles of location and clamping of jigs and fixtures. 7

(d) Give short notes on the following : 7

(i) Design consideration in press-working die design.

(ii) Design consideration in design of simple jig & fixtures.

4. (a) Define grinding process. 2

(b) Discuss the process of centerless grinding with the help of suitable diagram. 7

(c) Explain the principles of gear shaping and gear hobbing processes. 7

(d) Write short notes on the following : 7

(i) Specification of grinding wheel.

(ii) Gear cutting on milling machines.

5. (a) What is meant by thread rolling process? 2

(b) Briefly explain electron beam maching and laser beam maching processes giving their diagrams. 7

(c) What is Electro-Discharge machining process? Explain it in detail giving its diagram with its process parameters and surface quality obtained. 7

(d) Give short notes on the following : 7

(i) Necessity of spinability test in spining process.

(ii) Advantages and disadvantages of thread rolling.