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**B. E. (Fifth Semester) Examination,
April-May/Nov.-Dec. 2020**

(New Scheme)

(Mechanical Engg. Branch)

MANUFACTURING SCIENCE-II

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all the questions. Each of the questions carries equal marks. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d). Give suitable neat & clean figures wherever necessary. Assume suitable data if required and mention it at respective place(s).

Unit-I

1. (a) Give at least four differences between machining and grinding.

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- (b) Explain centre-less grinding process with the help of diagram. 7
- (c) What are the types of abrasives and bonding materials used for grinding of different materials? Discuss them. 7
- (d) Differentiate between the following on the basis of their operation process : 7
- (i) Honing and Lapping
- (ii) Polishing and Buffing

Unit-II

2. (a) Give at least four advantages of non-conventional machining processes. 2
- (b) Explain the process of Ultrasonic Machining with the help of its schematic. 7
- (c) Discuss process parameters and surface quality in Abrasive Jet Machining Process. 7
- (d) Give basic operational differences between the following : 7
- (i) ECM and EDM processes
- (ii) EBM and LBM processes

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Unit-III

3. (a) What are the basic differences between 'Cold Extrusion' and 'Hot Extrusion'? 2
- (b) Explain briefly the process of 'Open Die Forging' and 'Closed Die Forging' and state their main advantages and disadvantages. (Note that there is no need to give their diagrams). 7
- (c) What are the various Forging Defects and how they can be controlled? 7
- (d) What are the methods to produce 'Seamless Tube' by extrusion technique? Briefly explain with the help of diagram. 7

Unit-IV

4. (a) Write down the basic difference between 'Hot Rolling' and 'Cold Rolling'. 2
- (b) What are the different types of rolling mills? Explain them with their respective figures. 7
- (c) Discuss roll pass design for continuous rolling mill with the help of diagram. 7

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- (d) Differentiate between 'Wire Drawing' and 'Tube Drawing' processes with respect to their principle of operations and process applications. 7

Unit-V

5. (a) What is Embossing process? 2
- (b) Explain following press working operations giving their representative sketches : 7
- (i) Blanking,
 - (ii) Nibbling ,
 - (iii) Notching,
 - (iv) Piercing,
 - (v) Punching,
 - (vi) Shaving and
 - (vii) Trimming
- (c) What are the major components of a die and punch assembly? Explain with the help of neatly labelled diagram of a simple die-punch assembly. 7
- (d) Give short notes on the following : 7
- (i) Spring-back effect
 - (ii) Bend-radius