

**B.Tech. SEM -V Mechanical 2014 Course (CBCS) : SUMMER - 2019**

**SUBJECT: ADVANCED MANUFACTURING PROCESSES**

Day: Wednesday

Date: 15/05/2019

S-2019-2689

Time: 10.00 AM TO 01.00 PM

Max. Marks: 60

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
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**Q.1** What are the different types of press operations? Explain any two in detail with neat sketches. **(10)**

**OR**

**Q.1 a)** The symmetrical cup of depth 60mm and diameter 60mm is to be made from plane carbon steel of a thickness 1mm. make the necessary calculations for designing the drawing die. **(05)**

**b)** What are the various types of strippers? Explain their functions of the help of suitable sketches. **(05)**

**Q.2 a)** Explain indexing Jig and fixtures? **(05)**

**b)** What is 3-2-1 principles for Jigs and fixtures? **(05)**

**OR**

**Q.2 a)** What are the basic principles and guide lines for design Jigs and fixtures? **(05)**

**b)** What is the use of locators? Also explain any two with neat sketch? **(05)**

**Q.3** Draw neat sketch of Electro discharge machining process and explain its working, advantages, limitations and applications. **(10)**

**OR**

**Q.3** Explain Ultrasonic machining process with neat sketch. **(10)**

**Q.4** Describe the construction and operations of Robot with neat sketch. **(10)**

**OR**

**Q.4** Describe NC, CNC and DNC with their working, merits, demerits and applications. **(10)**

**P. T. O.**

**Q.5 a)** Explain the nitriding heat treatment with its advantages, limitations and applications. **(05)**

**b)** What is annealing? State its merits and applications. **(05)**

**OR**

**Q.5 a)** What do you mean by surface Hardening heat treatment? Give its applications. **(05)**

**b)** Discuss the Induction and flame Hardening. **(05)**

**Q.6** Explain the following techniques of powder metallurgy: **(10)**  
i) Isostatic moulding  
ii) Sintering

**OR**

**Q.6** Discuss the manufacturing of metal matrix composites. State its advantages and applications. **(10)**

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