

(3 Hours)

Total Marks: 80

Note:

1. Question No. 1 is compulsory.
2. Attempt any **THREE** out of the remaining **FIVE** questions.

- Q1. Answer any four of the following** **20**
- A Explain principle of clamping
 - B Discuss Abrasive jet machining
 - C State the advantages and disadvantages of additive manufacturing
 - D Explain Drill dynamometer
 - E Explain signature of grinding wheel
 - F Differentiate blanking die and combination die
- Q2. A Explain Photo Polymerization w.r.t principle of operation process, advantages and disadvantages.** **10**
- B Explain i) Machinability ii) Cutting fluids** **10**
- Q3. A Explain concept of speed, feed, and depth of cut in case of lathe, and how the tool life is affected** **10**
- B Give classification of presses and explain any one kind press** **10**
- Q4. A While machining C-40 with HSS cutting tool with feed rate of 0.2 mm/min and depth of cut of 2mm following information is noted**
- i) Tool life of 90 minute with cutting velocity of 25 m/min
 - ii) Tool life of 20 minute with cutting velocity of 20 m/min
- Determine n and C in Taylors tool life equation, and recommend cutting speed for tool life of 60 minute** **10**
- B Classify additive manufacturing systems and explain any one of them** **10**
- Q5. A Differentiate jig and fixtures. list clamping devices with sketch** **10**
- B Explain working principle of EDM with merits and demerits** **10**
- Q6. A Draw neat sketch of single point cutting tool and explain terminologies associated** **10**
- B Derive an expression for shear plane angle with assumptions made** **10**