

B.TECH SEM – V (2007 COURSE) (MECHANICAL ENGG.) :

SUMMER - 2018

SUBJECT: ADVANCE MANUFACTURING PROCESSES

Day: **Thursday**
Date: **24/05/2018**

S-2018-2682

Time: **10.00 AM TO 01.00 PM**
Max. Marks: 80

N.B.:

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from Section – I and Section – II.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Answers to both the sections should be written in **SEPARATE** answer books.
 - 4) Use of non programmable **calculator** is **ALLOWED**.
 - 5) Draw neat and labeled diagrams **WHEREVER** necessary.
 - 6) Assume suitable data, if **necessary**.
-

SECTION - I

- Q.1** a) Name the factors that contribute to the formation of built up edge in metal cutting (05)
b) Explain the design principles for drilling Jigs. (05)
c) Write differences between gear milling process and gear hobbing process. (04)
- Q.2** a) Explain merchant force circle with neat sketch. (07)
b) With the help of a sketch explain crater wear and flank wear (06)
- Q.3** a) What are types of drill bushes? What are the design considerations of jigs and fixtures? (07)
b) Why as many surfaces as possible should be machined at a single setting or featuring? (06)
- Q.4** a) Explain process principles and industrial applications of ultrasonic machining. (07)
What are the parameters which can affect the performance of USM?
b) What are the factors to select good electrolyte? What are the various reactions occurring in ECM process. (06)

SECTION - II

- Q.5** a) Explain with a neat sketch the working of a fly press. (05)
b) Explain the mechanism of liquid phase sintering. (05)
c) Explain salient features of flexible manufacturing system. (04)
- Q.6** a) What is a die? What are its uses? Describe with a sketch the working of commonly used dies (07)
b) Describe the construction and working of a mechanical press. (06)
- Q.7** a) What is hardening and tempering processes. Show on a TTT diagram water quenching and CCR critical cooling rate. (07)
b) Explain the nitriding heat treatment with its advantages, limitations and applications (06)
- Q.8** a) Classify CNC? Explain various steps uses in programming by APT? What are the functions of general post processor? (07)
b) What is canned cycle? Explain preparatory and miscellaneous functions in CNC (06)

* * * * *
