

Sem IV / CBCGS / AUTO / PP-II
(3 Hours)

13/12/2019

[Total Marks : 80]

Please check whether you have got the right question paper.

- N.B.:
- 1) Question No 1. is compulsory.
 - 2) All questions carry equal marks.
 - 3) Attempt any 3 out of the remaining 5 questions.

1. Attempt any four

(20)

- a) Describe one RP process with a neat sketch.
- b) Describe the factors affecting MRR in AJM.
- c) What is meant by dressing, trueing and balancing of grinding wheel.
- d) Describe features and mechanism of a compound die.
- e) What are the conditions under which different types of chips are formed in metal cutting?

2. a) What are the factors determining MRR in EBM?

(10)

- b) Describe chip formation in orthogonal cutting process.

(10)

3. a) Describe the process of finding center of pressure

(10)

- b) State the principles of location-w.r.t. Jigs and Fixtures.

(10)

4. a) What is the nomenclature for expressing the cutting tool signature in MRS. Draw a sketch also.

(10)

- b) Describe the process of photo-polymerization with a neat labelled sketch.

(10)

5. a) In an orthogonal cutting operation, the rake angle is 5° , chip thickness before the cut = 0.2mm and width of cut = 4mm. The chip thickness ratio is 0.4.

(10)

- i. Determine the chip thickness after the cut.
- ii. Determine shear angle
- iii. Determine friction angle
- iv. Determine co-efficient of friction
- v. Determine shear strain

- b) Determine the parentage change in cutting speed required to give 50% reduction in tool life. Take $n = 0.2$

(10)

6. Attempt all of the following

(20)

- a) Draw a neat labelled sketch of a typical twist drill.
- b) Differentiate between Transferred and non-transferred plasma arc machining process.
- c) Describe the dynamometer used in Milling Machine.
- d) Classify various locators used in Jigs and Fixtures.
- e) How does a welding fixture differ from a machining fixture?