

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)

- Describe one RP process with a neat sketch.
- Describe the factors affecting MRR in AJM.
- What is meant by dressing, truing and balancing of grinding wheel.
- Describe features and mechanism of a compound die.
- 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)

- Determine the chip thickness after the cut.
- Determine shear angle
- Determine friction angle
- Determine co-efficient of friction
- 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)

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