

Roll No.

24169

B. Tech 4th Sem. (Mechanical Engg.)

Examination - May, 2012

MANUFACTURING TECHNOLOGY - I

Paper : ME-202-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : (i) Attempt *Five* Questions in total, at least *one* question from each section.

(ii) Question No. 1 is **compulsory**.

(iii) Each question carries equal marks(20 marks).

1. (a) What are two - techniques of Oxy - Acetylene gas welding ? Describe them with sketches.
- (b) Define Welding.
- (c) Name and explain Three types of Oxy - Acetylene flames.
- (d) Differentiate between drawing and extrusion processes.
- (e) Differentiate between a Shaper and a Planer.

- (f) Name and explain pattern allowances.
- (g) List the factors influencing the surface finish.
- (h) What do you mean by a Sine bar ? What for is it used ?
- (i) Name and explain *two* methods of machining.
- (j) What do you mean by cutting parameters in metal machining ?

SECTION – A

2. (a) Draw a sketch of a typical right hand single point cutting tool, with all the detailed marked on it.
- (b) What do you mean by tool designation/
signature under ASA system in metal machining ?
If tool designation / signature is :
 $8 - 14 - 6 - 6 - 6 - 15 - 1/8$ What is meant by it ?
3. (a) (i) What are the requirements of a cutting fluid ?
(ii) How the cutting fluid is applied to the cutting tool ?
- (b) (i) What are the factors, which affect the cutting temperature ?
(ii) How the temperature in the cutting zone, measured ?

SECTION – B

4. (a) What are the main elements of jigs and fixtures ?

- (b) What do you mean by degree of freedom of movements of a free body in space ? Explain with sketch.
- 5. (a) Name and explain basic forging operations.
- (b) Enumerate forging defects.

SECTION – C

- 6. (a) What do you mean by a Gating System in casting process ? Explain with neat sketch.
- (b) Enumerate and explain properties of moulding sand.
- 7. (a) Name and explain common work holding devices used for a Centre Lathe.
- (b) What are the methods of taper - Turning on a centre Lathe ?

SECTION – D

- 8. (a) Enumerate the basic equipments required for high pressure gas welding.
- (b) Sketch and write on various "welding positions".
- 9. (a) What are the welding defects ? How they are removed ?
- (b) Explain basic principle of cold and hot working.