

Total No. of Pages: 1

B.Tech
CUTM1604

Even Semester Examination
MANUFACTURING PROCESS

Full Marks: 30

Time: 2 Hrs.

Answer Question No.1 which is compulsory and any Five from the rest.

The figure in the right hand margin indicates marks.

PART – A

[5x1=5]

1. Answer All:

- a) What is steel?
- b) What are the advantages of CATIA software?
- c) Why heat treatment process is required?
- d) Differentiate traditional and non-traditional machining.
- e) What are advantages of process planning?

PART – B

[5x5=25]

2. Differentiate thermos plastic and thermosetting plastic. What are the advantages of Aluminium alloys?
3. Give brief idea about different cutting tool materials. Why carbide tool material is most popular?
4. Describe annealing, hardening and tempering of steel. What do you mean by recrystallization temperature?
5. Describe EDM process with neat sketch.
6. Describe the working principle of gas welding? Differentiate TIG & MIG welding.
7. Describe additive manufacturing. Is There A Difference Between 3d Printing And Additive Manufacturing? What are the limitations of 3D printing?
8. Write short notes on any **Two**:- [2x2.5]
 - a) Crystal defects
 - b) Surface hardening
 - c) Cold working and Hot working
 - d) DELMIA

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MANUFACTURING PROCESS

Full Marks: 30

Time: 2 Hrs.

Answer Question No.1 which is compulsory and any Five from the rest.

The figure in the right hand margin indicates marks.

PART – A

[5x1=5]

1. Answer All:

- a) Define alloy with examples?
- b) What are the advantages of heat treatment?
- c) What are the benefits tensile test?
- d) Differentiate machining and joining process with examples.
- e) What are advantages of machining process?

PART – B

[5x5=25]

2. Differentiate ferrous and non-ferrous metals. What are the advantages casting process?
3. Classify different plastics with their characteristics. Write down the general steps in powder metallurgy process.
4. What are the purposes of the processing heat treatments? List the various stages of a heat treatment process.
5. Describe EDM process with neat sketch.
6. What are the advantages of TIG & MIG welding? Differentiate Arc welding and Oxy-fuel welding.
7. How does 3D printing work? Name different materials used in 3D printing technologies?
8. Write short notes on any **Two**:- [2x2.5]
 - a) Mechanical Properties
 - b) Aluminium Alloy
 - c) Casting Process
 - d) CAPP

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B. Tech.
CUTM1064

MANUFACTURING PROCESS

Full Marks: 60

Time: 3 Hrs.

Answer Question No.1 which is compulsory and any five from the rest.

The figure in the right-hand margin indicates marks.

PART – A

[10x1.5=15]

1. a) Differentiate machining and welding process with examples?
- b) What is a product cycle?
- c) What do you mean by cope and drag?
- d) Differentiate runner & riser in metal casting.
- e) What are the advantages of a welding process?
- f) What is the principle of gas welding?
- g) What methods are used for producing metal powders?
- h) Differentiate shearing & bending.
- i) What is elastic deformation?
- j) Differentiate cold & hot extrusion.

PART – B

[5x9=45]

2. What are the basics of a rolling process? Describe the different basic operations performed in smith forging. [2+7]
3. Describe the features of metal forming. What are the advantages and disadvantages of hot working? What are the factors affecting plastic deformation? [3+4+2]
4. What are the functions of a good gating system? Define aspiration effect of casting? Draw a schematic view of the ideal and actual shape of the sprue. Write short notes on solidification of casting. [3+3+3]
5. What are the steps involved in the sand-casting process? Explain centrifugal casting in brief. [3+6]
6. What are the various fusion welding processes? Explain electric arc welding. [3+6]
7. Explain ultrasonic and laser beam welding. Explain notching, perforating, and nibbling related to sheet-metal working. [6+3]
8. Write short notes on (any **Three**):- [3x3]
 - a) Mass Production
 - b) Cupola Furnace
 - c) Rolling Mills
 - d) Forging Process

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B.Tech
CUTM1604

Odd Semester Examination: NOV-DEC 2022

MANUFACTURING PROCESS

Full Marks: 30

Time: 2 Hrs.

Answer Question No.1 which is compulsory and any Five from the rest.

The figure in the right hand margin indicates marks.

PART – A

[5x1=5]

1. Answer All:

- a) What is bronze?
- b) What are the advantages of HSS tool material?
- c) Why heat treatment process is required?
- d) Differentiate casting and forming process with examples.
- e) What are advantages of computer aided process planning?

PART – B

[5x5=25]

2. Differentiate ferrous metals and non-ferrous metals. What are the advantages of super alloys?
3. Give brief idea about different modern cutting tool materials. Why carbide tool material is most popular?
4. Describe annealing, hardening and tempering of steel. What do you mean by recrystallization temperature?
5. In EDM, identify the characteristics of an electrode material in order to serve as a good tool. What are the factors upon which the material removal rate and surface roughness depends?
6. What are the many types of welding used for various purposes under different situations? Differentiate TIG & MIG welding.
7. What types of 3D printing filaments are there? Which types of 3D printing technologies are there? What are the limitations of 3D printing?
8. Write short notes on any **Two**:- [2x2.5]
 - a) Crystal Structure
 - b) Powder metallurgy
 - c) Cold working and Hot working
 - d) CATIA

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B.Tech
CUTM1604

Odd Semester Examination: NOV-DEC 2022

MANUFACTURING PROCESS

Full Marks: 30

Time: 2 Hrs.

Answer Question No.1 which is compulsory and any Five from the rest.

The figure in the right hand margin indicates marks.

PART – A

[5x1=5]

1. Answer All:

- a) What is brass?
- b) What are the advantages of coated carbide tool material?
- c) What are the benefits of heat treatment process?
- d) Differentiate forming and joining process with examples.
- e) What are advantages of process planning?

PART – B

[5x5=25]

2. Differentiate metals and non-metals. What are the advantages of bio-materials?
3. Classify different plastics with their characteristics. Write down the general steps in powder metallurgy process.
4. What are the purposes of the processing heat treatments? List the various stages of a heat treatment process.
5. Describe EDM process with neat sketch.
6. What are the many types of welding used for various purposes under different situations? Differentiate Arc welding and Oxy-fuel welding.
7. How does 3D printing work? Which types of 3D printing technologies are there?
8. Write short notes on any **Two**:- [2x2.5]
 - a) Scanning Electron Microscope
 - b) Steel
 - c) Casting Process
 - d) CAPP