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**Question Paper Code : X 10695**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020 AND  
APRIL/MAY 2021

Third/Fourth Semester

Aeronautical Engineering

ME 8392 – MANUFACTURING TECHNOLOGY

(Common to Aerospace Engineering/Automobile Engineering/Mechatronics  
Engineering)

(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Compare the shell moulding and investment moulding.
2. Which of the casting process is used to produce FGM alloy castings ? Justify.
3. Draw the preferable polarity of power source for plasma arc cutting process.
4. What is under cut ? How is it prevented ?
5. Differentiate between drilling and boring.
6. What is EDM ? Give any two applications.
7. Compare the properties of thermoplastic materials with thermosetting materials.
8. Define the term “Indirect extrusion”. Give its applications.
9. Compare and contrast the powder metallurgy process.
10. What is spring back effect in rolling process ?



PART – B

**(5×13=65 Marks)**

11. a) Explain the working principle of pressure die casting process with suitable examples.

(OR)

b) Explain the different types of core making process. Also draw and mention the moulding tools.

12. a) i) What are the different classifications of welding processes as per AWS and discuss about the merits and the demerits of each one of them with specific examples. **(7)**

ii) Explain in detail about the different types of oxyacetylene flames and their effect on the quality of the weldments. **(6)**

(OR)

b) Discuss the basic principle and construction of the following solid welding processes

i) Diffusion welding process. **(6)**

ii) Friction stir welding process. **(7)**

13. a) Explain the working principle, construction and operational sequence of conventional lathe machine with schematic diagram.

(OR)

b) Discuss in detail about the principles and functions of electric discharge machine with a neat diagram. Enumerate its advantages and limitations.

14. a) i) Explain the working principle and construction of compression moulding. **(8)**

ii) Describe the significance of forming limit diagram with a sketch. **(5)**

(OR)

b) What is blow moulding? Discuss in detail the principle and working operation of blow moulding process with a neat diagram.



15. a) Explain different types of forging machines and discuss the causes and remedies of any four forging defects with sketches.

(OR)

- b) What is powder metallurgy ? Explain the preparation method of powder metallurgy in detail flowchart.

PART – C

(1×15=15 Marks)

16. a) Explain the various casting defects and explain the causes and remedies of casting process.

(OR)

- b) Explain the working principles of plasma arc welding process with suitable applications.
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