

[03Hours]

[Total Marks: 80]

N.B. 1) Question No 1 is **Compulsory**

- 2) Attempt any **three** out of the remaining **five** questions
- 3) Figures to the **right** indicate full marks
- 4) Draw neat **sketches** wherever necessary

1. Attempt **any four** of the following

[20]

- a) Mechanism of sintering
- b) Thread rolling
- c) Centrifugal Casting
- d) Carbon Arc Welding
- e) Blow Moulding

2. a) Explain any two non-destructive techniques with sketch.

[10]

b) Explain rotary swaging with its sketch?

[10]

3. a) Explain - (i) Principle of gating (ii) Principle of risering.

[10]

b) What is weldability? Discuss various welding defects.

[10]

4. a) Explain vacuum forming process of polymers.

[5]

b) Differentiate Welding, soldering and brazing.

[5]

c) Write short note on Pattern materials

[5]

d) Differentiate between open and closed die forging.

[5]

5. a) Compare TIG and MIG welding.

[10]

b) What is powder metallurgy? Why gears are manufactured by powder metallurgy? List the advantages of powder metallurgy.

[10]

6. Attempt the following

[20]

a) Discuss types of flames in gas welding.

b) Write short note on application of plastics in industries.

c) Describe Ultrasonic testing process with a neat labelled sketch.

d) What are the limitations of powder metallurgy processes over other competing processes?
