





12. a) Enumerate the principle of operation, advantages and limitations of laser beam welding. (13)

(OR)

b) i) Explain the mechanism of metal transfer in MIG welding. (7)

ii) Sketch and explain the process of thermit welding. (6)

13. a) i) Enumerate with neat sketches any three operations that can be performed on lathe. (6)

ii) Describe with neat sketch the principle of ultrasonic machining. (7)

(OR)

b) Explain the different methods of indexing commonly used in a milling machine. (13)

14. a) Explain the working principle of the following processes.

i) Compression moulding. (6)

ii) Injection moulding. (7)

(OR)

b) i) Describe with neat sketch the principle of ultrasonic welding of plastics. (8)

ii) Describe the process of rotational moulding as used for producing plastic components. (5)

15. a) Enumerate the principle steps involved in powder metallurgy process with neat sketch. (13)

(OR)

b) Write the principle and applications of following processes

i) Rolling. (4)

ii) Spinning. (4)

iii) Forging. (5)

PART – C

(1×15=15 Marks)

16. a) Explain the process of powder metallurgy for producing an self lubricating gear used in transmission system of an automobile.

(OR)

b) Describe the welding defects in manufacturing with examples.