

Con. 5601-13.**LJ-10412****(OLD COURSE)****(3 Hours)****[Total Marks : 100**

- N.B. :**
- (1) Questions No. **one** is **compulsory**.
 - (2) Attempt any **four** questions from the remaining **six** questions.
 - (3) **Figures** to the **right** indicate **Full** marks.
 - (4) Draw neat sketches wherever required.
 - (5) Assume suitable data if required.

1. Write short notes on the following (any **four**) **20**
 - (i) Dressing and Truing of Grinding wheels
 - (ii) Friction welding
 - (iii) Dye penetrant test
 - (iv) Pattern allowances
 - (v) Ultrasonic machining
 - (vi) Taper turning methods.
2. (a) Explain with the help of neat sketch construction and working of a lathe machine. **10**
 - (b) Write the difference between Up-milling and Down-milling. **5**
 - (c) Define cutting speed, feed and depth of cut in drilling. **5**
3. (a) Why risers are used? Explain principles of riser design and gating system. **10**
 - (b) Explain the Identification causes and remedial measures of the following casting defects. **10**
 - (i) Scab
 - (ii) Blow holes
 - (iii) Shrinkage cavities
 - (iv) Mismatch
 - (v) Porosity.
4. (a) Explain centreless grinding operation. **5**
 - (b) Sketch and Explain 'crank and slotted link mechanism' in shaper. **8**
 - (c) Explain the principle, working and Application of com process. **7**
5. (a) Explain 'Sintering' process of powder metallurgy. **5**
 - (b) Explain 'Radiographic' as Non-destructive method of Inspection. **7**

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- (c) Explain the following terms w.r.t. Grinding wheel. **8**
- (i) Grit
 - (ii) Grade
 - (iii) Structure
 - (iv) Band
- 6.(a) Write the difference between soldering and brazing. **5**
- (b) Explain MIG welding process. **7**
- (c) Explain OXY-acetylene Gas welding. Also explain different types of flams with sketches. **8**
- 7.(a) Sketch and explain 'Electric Arc' Furnace. State its advantages and applications. **10**
- (b) Differentiate between capstan and Turret lathe. **5**
- (c) Sketch and explain following operations **5**
- (i) Counterboring
 - (ii) Reaming
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