Total No. of Questions—**12**] [Total No. of Printed Pages—**4**

Seat No.	

[4957]-115

S.E. (Mechnical/Auto.) (First Semester) EXAMINATION, 2016

MANUFACTURING PROCESSES

(2008 PATTERN)

Time : Three Hours **Maximum Marks : 100**

N.B. **:—** (*i*) Answer Q. No. **1** *or* Q. No. **2**, Q. No. **3** *or* Q. No. **4**, Q. No. **5** *or* Q. No. **6** from Section I and Q. No. **7** *or* Q. No. **8**, Q. No. **9** *or* Q. **10**, Q. **11** *or* Q. No, **12** from Section II.

(*ii*) Answer to the two Sections should be writen in separate-books.

(*iii*) Figures to the right side indicate full marks.

(*iv*) Neat diagrams must be drawn wherever necessary.

(*v*) Assume suitbale data, if necessary.

(*vi*) Assume suitable data, if necessary.

SECTION I

1. (*a*) Explain with sketch different types of cores. [8]

(*b*) Explain in detail steps involved in making sand mould. [8]

Or

2. (*a*) Explain any *four* characteristics of moulding sand. [8]

(*b*) Explain constituents of moulding sand. [8]

P.T.O.

3. (*a*) Compare between Hot working and Cold working. [8]

(*b*) Sketch and explain machine or Upset forging state advantages and limitations. [8]

Or

4. (*a*) Describe press forging process. How does it differ from drop forging ? [8]

(*b*) With sketch explain Roll Forging and Roll Forming. [8]

5. (*a*) With neat diagram, explain projection welding process. State applications, advantages and limitation of the process. [10]

(*b*) Sketch and explain different types of flames used in gas welding. [8]

Or

6. (*a*) Explain welding defects with causes and remedies. [10]

(*b*) With sketch explain Shielded Metal Arc welding state advantages and limitations. [8]

SECTION II

7. (*a*) Explain four operations performed on lathe machine with sketch. [8]

(*b*) Explain with diagram Tumbler gear mechanism and Half nut mechanism. [10]

Or

8. (*a*) State types of taper turning methods and explain with diagram any one taper turning method. State advantages and limitations. [8]

(*b*) Calculate the machining time required for 4 passes while reducing 73 mm diameter shaft to 55 mm diameter for a length of 1150 mm with depth of cut of 3 mm for rough cut and 1 mm for finish cut. [10]

Given :

(*i*) Cutting speed = 21.5 m/min

(*ii*) Feed = 1.2 mm/rev

(*iii*) Approach length = 5 mm

(*iv*) Over run length = 5 mm

(*v*) Number of passes = 4 (3 rough cut + 1 finish cut)

9. (*a*) Explain with sketch any four holding devices used for milling machine. [8]

(*b*) Explain with diagram following milling machine operations. Face milling, Angular milling, Form milling straddle milling. [8]

Or

10. (*a*) Explain with diagram sensitive drilling machine. [8]

(*b*) Calculate the speed and machining time required for producing 18 hole on an M.S. plate of 22 mm thickness with the following data : [8]

(*i*) Drill diameter = 16 mm

(*ii*) Cutting speed = 25 m/min

(*iii*) Feed = 0.15 mm/rev.

11. (*a*) State types of grinding machines and explain any with neat sketch. [8]

(*b*) What is Grain, Grit, structure and grade of grinding wheel ? [8]

Or

12. (*a*) Explain the process of lapping with neat sketch. [8]

(*b*) With sketch explain applications of any four grinding wheel shapes. [8]