

SECOND SEMESTER DIPLOMA EXAMINATION IN MECHANICAL
ENGINEERING — MARCH, 2015

MANUFACTURING PROCESS

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer all questions in one or two sentences. Each question carries 2 marks.

1. Define hardness.
2. What is the use of a vernier height gauge ?
3. What is the purpose of a comparator ?
4. What do you mean by seasoning of wood ?
5. Write the ingredient of core sand. (5×2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. Define the following physical properties of metals.
(i) Density (ii) Viscosity (iii) Specific gravity.
2. Explain ultrasonic testing of materials.
3. Write the difference between Comparator and a Gauge.
4. Explain the following forging operations
(i) Upsetting (ii) Drawing down (iii) Setting down.
5. Write the principle of Arc welding.
6. Explain different type of flames used in gas welding.
7. List different type of patterns used in foundry. (5×6=30)

PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT—I

- III (a) Explain impact test. 9
 (b) Explain the following mechanical properties of metals :
 (i) Creep (ii) Fatigue. 6

OR

- IV (a) Explain radiographic test. 8
 (b) Draw a typical stress strain diagram for a ductile material. 7

UNIT—II

- V (a) Sketch the figure of vernier calliper and label its parts. 7
 (b) Explain the following gauges :
 (i) Plug gauge (ii) Screw pitch gauge. 8

OR

- VI (a) With a neat sketch explain vernier depth gauge. 8
 (b) Explain the working of a dial indicator. 7

UNIT—III

- VII (a) Explain flat die forging and closed die forging. 6
 (b) Explain the advantages and limitations of welding. 9

OR

- VIII (a) Explain TIG welding. 10
 (b) Explain the following welding defects :
 (i) Porosity (ii) Undercut. 5

UNIT—IV

- IX (a) What are the desirable properties of moulding sand ? 10
 (b) List different marking and measuring tools used in fitting. 5

OR

- X (a) Write short notes on the following pattern making allowances :
 (i) Shrinkage allowances (iii) Machining allowances
 (ii) Draft allowances (iv) Rapping allowances. 8
 (b) Explain the sweep moulding process. 7