VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA
DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING
SESSION 2016 - 17 (ODD SEMESTER)

Total Pages—4

(Set-T_1)

B.Tech - 5th
Fabrication of Materials

Full Marks : 70

Time : 3 hours

Answer six questions including Q. No. 1 which is compulsory

The figures in the right-hand margin indicate marks

Symbols carry usual meaning

1. Answer *all* questions : 2 × 10

   (*a*) What do you mean by pattern ? List various types of pattern.

   (*b*) Different between green sand and dry sand casting.

   (*c*) What are the functions of riser and runner ?

   (*d*) What is shrinkage's allowance ? Machining allowance ?

(*Turn Over*)

(e) Explain the principal of arc welding.

(f) Describe the difference between Brazing and soldering.

(g) What are the significant roles of powder metallurgy in manufacturing ?

(h) What are the basic rolling defects ?

(i) How AC/DC power source affect the weld ?

(j) What do you mean by fluidity ?

2. (a) Describe the importance of controlling roll speeds, roll gaps, temperature, and other process variables in tandem rolling operation. 5

(b) Explain variables of metal forming process. 5

3. (a) Briefly explane the MIG welding process with schematic diagram. 5

(b) What do you mean by nondestructive testing methods ? Explain any two. 5

(Continued)

4. (*a*) Describe the Centrifugal casting with advantages and limitations. 5

(*b*) Explain briefly powder metallurgy process. 5

5. (*a*) Explain the gating system in casting with objective. 5

(*b*) Compare the arc furnace and registrant furnace. 5

6. (*a*) Differentiate between hot and cold working process. 5

(*b*) Explain the effects of using fine powders and those of using course powders in the making of P/M parts. 5

7. (*a*) Briefly explain the precision casting process. 5

(*b*) How the sand binders and additives affect the casting ? 5

8. Write short notes on any *two* : 5 × 2

(*i*) Explosive welding

(*ii*) Ultrasonic welding

(*iii*) Rolling mills

(*iv*) Cupola furnace.
