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V—Sem/MECH/2015(W)

PRODUCTION TECHNOLOGY

(Code : MET - 502)

Full Marks : 70

Time : 3 hours

Answer any **five** questions

Figures in the right-hand margin indicate marks

1. (*a*) Define extrussion process. 2

(*b*) Differentiate between direct and indirect extrusion process. 5

(*c*) Explain any rolling process with respect to advantages, limitations and field of application. 7

2. (*a*) What is welding ? 2

(*b*) Write down the difference between TIG and MIG welding process. 5

(*Turn Over*)

(*c*) What is the use of flux-in welding process ? Explain the resistance welding in detail with neat sketch. 7

3. (*a*) What are the binding materials used for moulding sands ? 2

(*b*) Define the casting defects and write down their causes and remedies. 5

(*c*) Describe the construction and working principle of cupola furnace. Draw a neat diagram. 7

4. (*a*) What is core ? 2

(*b*) Explain various pattern allowances. 5

(*c*) What is moulding sand ? Explain different types of moulding sand. State the desirable properties of moulding sand. 7

5. (*a*) Define sintering. 2

(*b*) State advantages of powder metallurgy technology technique. 5

(c) Explain different process of powder metallurgy. 7

6. (a) State various press operations with tools used. 2

(b) Explain a progressive die. How does it differ from a compound die ? 5

(c) Describe various advantages and disadvantages of simple and compound dies. 7

7. (a) Define Jigs. 2

(b) What are the advantages of using jigs and fixture ? 5

(c) State the principle of Locations and describe of Location with respect to 3-2-1 point location of a rectangular Jig. 7