

Government College Of Engineering, Aurangabad
(An Autonomous Institute Of Government Of Maharashtra)

End Semester Examination 2016-2017
ME303: ENGINEERING METALLURGY

1.9 NOV 2016

Time: Three Hours

Max Marks: 60

“ Verify the course code and check whether you have got the correct question paper”

NB:-

- 1 All questions are Compulsary.
- 2 Figures to the right indicate full marks.
- 3 Assume suitable data if necessary and state it clearly
- 4 Use of non-programmable Calculator is allowed.

Q.1 Attempt any two **12 Marks**

- i) Explain Izod Impact test and explain specimen fixing arrangement?
- ii) Explain Hume Rothery's Rules of Solid solubility?
- iii) Explain the method of plotting Equilibrium Diagram by use of cooling curves?

Q.2 Attempt any two **12 Marks**

- i) Draw and explain equilibrium diagram for an Eutectic system?
- ii) Explain different critical temperatures and their significance during heating and cooling?
- iii) Describe Lever Rule as applied to Equilibrium Diagram?

Q.3 Attempt any two **12 Marks**

- i) What are Tool steels? Explain the classification of tool steels?
- ii) What are Austenitic stainless steels? Explain types and properties?
- iii) Explain weld decay in stainless steels with remedies?

Q.4 Attempt any two **12 Marks**

- i) Explain the purpose and process of Normalizing heat treatment? Give characteristics of microstructure?
- ii) Describe Flame hardening process and give its merits and demerits?
- iii) What are various methods of surface hardening?

Q.5 Attempt any two **12 Marks**

- i) Explain Sintering process? Explain the various stages of sintering?
- ii) Write a short note on Aluminium and its alloys?
- iii) What are various processes of powder manufacture?

