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Question Paper Code: 55903

B.E./B.Tech. DEGREE EXAMINATION, DEC 2020

Fifth Semester

Chemical Engineering

19UCH306- Engineering Materials for Process Industries

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

- Which of these are applications of grey cast iron? CO1- R
 - Camshafts, engine blocks
 - Wear plates, pump linings
 - Brake shoes, pedals
 - Gears, rocker arms
- For steel, which one of the following properties can be enhanced upon annealing? CO1- R
 - Hardness
 - Toughness
 - Ductility
 - Resilience
- Traces of which of the following element is considered undesirable in steel? CO2- R
 - Chromium
 - Copper
 - Boron
 - Titanium
- Alloy steels containing 0.05% to 0.15% of alloying elements are called _____. CO2- U
 - Weathering steel
 - Stainless steel
 - Tool and die steel
 - Microalloyed steel
- Which of the following is not an ore of Magnesium? CO3- R
 - Cassiterite
 - Dolomite
 - Kieserite
 - Carnallite

6. Which of the following alloy is widely used in thermo couples? CO3- R
 (a) Brass (b) Bronze (c) Duralumin (d) Nichrome
7. Vulcanized BUNA – N is resistant to _____ CO4- R
 (a) High temperatures (b) Low temperature (c) Oils (d) Acids
8. What is 96% silica glass used for? CO4- R
 (a) Heat shield (b) Combustion tubes
 (c) Electronic tubes (d) Temperature thermometers
9. Which components of an automobile are envisioned to be coated with zirconia? CO5- U
 (a) Spark plugs (b) Liners (c) Tyres (d) Brakes
10. Which of the following is not an aerospace material? CO5- U
 (a) Plastics (b) Silica
 (c) Aluminium alloys (d) Polymers

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail about the chemical properties of the materials CO1- U (8)
12. Explain in detail about the factors affecting the selection of materials for engineering processes. CO2- U (8)
13. What are the alloys of chromium? and write its application in process industries. CO3- U (8)
14. How carbon can be effectively used for material of construction? CO4- U (8)
15. What are the unique characteristics of bio polymers and its applications? CO5- U (8)

